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ABSTRACT

A detailed analysis was conducted of the difficulty over time of the essay prompts for the English Composition Achievement Test (ECT) with Essay of the College Board. Differential difficulty was explored by considering whether the relationship between the reference groups of male and white students and the focal groups (female, American Indian, Asian American, Asian American with English-as-a-Second-Language, Black Hispanic American, and Hispanic American with English-as-a-Second-Language students) had remained constant over the 7 years studied (1983, and 1985 through 1990). To study the relationships between the ECT objective and the ECT with essay, linear regressions and conditional means of essay scores on objective scores were computed. For each comparison, difference lines for regressions and conditional means were plotted to identify years with aberrant differences. Differences were very consistent across the years, indicating that essay prompts did not generally cause groups to perform differentially. However, two essay prompts that may have caused differential performance were identified. Five tables and 17 graphs present analysis data. There is a 12-item list of references. Appendix A contains an additional 27 tables and 18 graphs. Appendixes B and C contain sample prompts. (Author/SLD)

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College Board Report

No. 92-4

An Analysis of English Composition Test Essay Prompts for Differential Difficulty

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College Board Report No. 92-4
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ABSTRACT

The purpose of this study was to conduct a detailed analysis of the difficulty over time of the essay prompts for the English Composition Achievement Test (ECT) with Essay of the College Board. Differential difficulty was explored by considering whether the relationship between the reference groups—male and white students—and the focal groups—female, American Indian, Asian American, Asian American ESL (English Second Language), black, Hispanic, and Hispanic ESL students—had remained constant over the seven years studied. The study used ECT data for seven of the last eight years: 1983, 1985, 1986, 1987, 1988, 1989, and 1990. In order to study the relationship between the ECT objective and the ECT with Essay, linear regressions and conditional means of essay scores on objective scores were computed. For each comparison, difference lines for the regressions and conditional means were plotted in order to identify any years with aberrant differences. These differences were very consistent across the years, indicating that test developers had been successful in using essay prompts that did not generally cause groups to perform differentially. Two essay prompts, however, were identified that contained characteristics that may have been related to differential performance. It is recommended that these findings be followed by analysis of more essay prompts and by more research into the nature of the essay performance of minority and ESL groups.

BACKGROUND

The ECT with Essay is offered every December by the College Board as part of the Admissions Testing Program. This test contains an essay question that measures a test taker's writing ability. An essay prompt is used to pose the essay question and structure the response. Test developers attempt to develop prompts that are similar in difficulty from year to year. At the present time, however, the essay prompts are not analyzed to determine how similar they are in difficulty over years for the subgroups taking the test. It is possible that the essay prompts interact with subgroup membership; that is, differences in performance among subgroups could vary from one year to the next. This study examines the performance of subgroups over time to determine the extent to which different essay prompts result in different performance patterns.

There are two commonly used approaches to research on this issue. Both focus on the performance of focal groups (e.g., minority) as compared to the performance of reference groups (e.g., white) on essays and multiple-choice measures. One compares standardized-mean differences (mean differences divided by average standard deviation) between the two groups on each measure. The other research approach focuses on essay performance of the two groups after matching for performance on the multiple-choice measure given with the essay.

Both approaches can be used to identify factors related to the differential performance of focal and reference groups on essays. Using both approaches, Mazzeo, Schmitt, and Bleistein (1991), found that some essay content appeared to advantage male students, while other essay content appeared to favor female students. The current study, primarily using the matching approach, investigated characteristics of essay prompts that were associated with differential performance of minority and female students.

The purpose of this study was to conduct a detailed subgroup analysis of the differential performance over time on the ECT essay in terms of sex, ethnicity, and language proficiency. If inconsistent differential performance was identified, test development analysis of essay features occurred. If any particular features were identified as related to the differential essay performance, they could be used by test development in the future to avoid construction of questions that are differentially difficult for any subgroup.

Literature Review

On most tests of English-language skills, either multiple-choice or essay, white students clearly outperform most minority students. Using standardized-mean differences, however, it is a relatively common finding that the differences for some focal groups (female, black, and Hispanic students) are smaller in relation to those for reference groups (male, white) on essays than they are on multiple-choice questions.

This result has been found across ability groups, difficulty levels, and countries. It has been reported for the ECT (Petersen and Livingston 1982), for English-language tests in Great Britain (Bell and Hay 1987), for English basic skills measures (Breland and Griswold 1982), for the Advanced Placement Examination in English Language and Composition (Mazzeo, Schmitt, and Bleistein 1991), and for pilot tests of the writing test of the College Board's Scholastic Aptitude Test (Livingston 1990). For example, in the Petersen and Livingston (1982) study, black American students, Asian American students who reported English as their best language (EBL), and Hispanic students all scored higher, using standardized-mean differences, in relation to white students on the essay than on the multiple-choice section of the ECT.

Several studies have investigated the advantage for female students relative to male students on essays in comparison to multiple-choice questions. Mazzeo, Schmitt, and Bleistein (1991) studied gender differences on essay and multiple-choice sections of the Advanced Placement (AP) Examinations. They investigated several hypotheses about the higher female than male performance on the AP essays compared to the multiple-choice sections. Little support was found for the hypotheses that gender differences were

due either to reliability differences between essays and multiple-choice questions or to method bias as identified by differential item functioning (DIF) procedures. Breland (1991) investigated whether variables that could influence the scoring of essays, such as the neatness of handwriting, may cause the differences. Although Briggs (1980) had found that neatness of writing is associated with higher essay scores, Breland did not find that the sources of method variance he studied were related to male-female differences.

In addition, Mazzeo et al. (1991) also investigated essay characteristics that accompanied higher female or male student performance on the AP examinations. They found that for the English Language and Composition examination, female students performed relatively better on essay questions related to topics such as childhood and human nature, while male students performed relatively better on essay topics such as space satellites and American prairie ruggedness. Mazzeo et al. noted that these topics corresponded to stereotypic female-oriented and male-oriented interests.

The other research approach into the essay performance of minority groups matches on multiple-choice scores and then looks at performance on the essay. This research consistently finds that minority examinees with the same score as white students on a multiple-choice measure of writing perform less well on the essay than the white students.

Petersen and Livingston (1982) concluded that there was a tendency for white students to score slightly higher on the essay than black, Hispanic, or Asian American students with the same objective test scores. There was also a tendency for female students to perform slightly better on the essay than male students with the same objective test scores, even though males received higher SAT-V scores. These differences did not appear related to differences between the groups in school grades, self-evaluations of writing, or other test scores.

Using performance on the California State University College English Placement Test (EPT), Breland and Griswold (1982) found significant interactions due to group membership for the prediction of EPT essay scores separately by SAT-V, Test of Standard Written English (TSWE), and EPT-Sentence Construction scores. Using SAT-V and TSWE as multiple-choice measures, they concluded that women wrote better essays than would be expected from their objective test scores. Black and Mexican American students with low scores, however, tended to write poorer essays than would be expected from objective test scores. The authors concluded that because of small samples at higher score levels, linear-regression analyses erroneously suggested that Asian, black, and Mexican American students with high objective scores had underpredicted essay scores.

Breland and Duran (1985) investigated the performance of Spanish-speaking populations on the ECT. They predicted ECT essay performance from ECT multiple-choice scores for three groups: Mexican American EBL, Puerto Rican EBL, and Puerto Rican ESL students. They found that the regression line from the total group overestimated the writing ability of the three groups. The authors speculated that this finding may be because an ability to passively detect acceptable versus unacceptable usage in a new language often precedes comparable productive skill in a new language. Breland and Duran also found that some students with very high objective scores may have had underestimated essay scores.

Only a few studies have contributed information about why some groups are overpredicted and others underpredicted. Breland and Jones (1982) investigated the writing characteristics that were associated with essay-writing performance. They found that black students' essay scores were related to high percentages of negative ratings for the three characteristics most associated with high essay scores for the total group: noteworthy ideas, supporting materials, and overall organization. In contrast, the three areas with the highest negative ratings for white students were precision of diction, rhetorical strategy, and paragraphing and transition. The Hispanic ESL student group had high negative ratings for sentence logic and precision of diction, suggesting basic discourse and lexical difficulties.

In a somewhat related study, Chaplin (1988) conducted an investigation of the writing characteristics of black and white students in eighth grade who participated in the National Assessment of Educational Progress (NAEP) or the New Jersey High School Placement Tests (NJHSPT) in 1983–84. A lower proportion of black students was able to write effectively using appropriate conventions and organization. Other findings show that the informative mode was most difficult for black and white students, grammatical skills were poorly used by all students, and black English vernacular (BEV) was used by fewer than 5 percent of the black students. The difficulties seemed primarily related to a lack of writing practice and effective instruction.

This research shows that matching on objective scores overestimates essay performance for minority examinees. But Breland and Duran (1985) and Chaplin (1988) have shown that construct-relevant differences in essay performance do exist between groups. Although this is evidence that real differences exist, the findings of Mazzeo et al. (1991) suggest the additional possibility that certain essay characteristics, possibly construct irrelevant, can cause differential performance for certain groups of examinees.

The main purpose of this study was to identify essay features, such as content, that might cause differential performance. This study investigated whether essay features interact with group membership. This possible interaction was explored by considering whether the relationship between the reference groups—male and white students—and the focal groups—female, American Indian, Asian American, Asian American ESL, black, Hispanic, and Hispanic ESL students—had remained constant over the years studied. If significant deviations from the general pattern of relationships were discovered over the years, the essays were

analyzed to determine if some characteristic was related to the differences.

METHOD

The ECT with Essay has two sections: a 20-minute essay section consisting of one question or topic; and a 40-minute objective section consisting of 70 multiple-choice items. Each of these sections yields a score. These two scores are combined into a raw composite score, which is in turn transformed into a scaled score that is reported to the candidate. The ECT with Essay is offered only at the December administration of the Achievement Tests. At the other administrations, a version of the ECT consisting of 90 multiple-choice items is taken by candidates.

The essay section is scored holistically by two readers working independently. Each reader assigns the essay a grade of 1 to 6, and the candidate's essay score is the sum of these grades.[1] The objective section is scored with a correction for guessing (formula scored). The candidate's objective score is the number of questions answered correctly minus one-fourth of the number of wrong answers. The essay and objective scores are combined into a raw composite score in such a way as to give the 40-minute objective section twice as much emphasis as the 20-minute essay section. The raw composite score is then converted to a scaled score on the College Board 200 to 800 scale.

The ECT with Essay (College Board 1979) is designed to measure the test taker's ability to write expository prose that follows the requirements of standard written English. It measures the test taker's ability to do the kind of writing required in most college courses, writing in which the examinee explains a point of view, defends it, or persuades another to accept it. This kind of expository writing emphasizes precision in diction, logic in the presentation of ideas, and clarity of expression. The topic chosen must elicit expository essays and not encourage trite responses or highly emotional writing. The topic should encourage examinees to interpret and to agree or disagree to whatever extent they see fit.

Analysis

This study used ECT data for seven of the last eight years, 1983, 1985, 1986, 1987, 1988, 1989, and 1990. Data tapes with full populations, usually about 70,000 to 80,000 examinees, were used for six of the seven years analyzed. For 1985, records were only available on a sample of 11,638 examinees. Originally 1984 was also to be included, but the available sample of 4,132 examinees was deemed too small for the subgroup breakdowns desired in this study.

1. If two grades differ by three to five points, the essay receives a third reading. For differences of three to four points, the third grade is added to the average of the two original grades. For differences of five points, the third grade replaces the most discrepant original grade.

The analysis included all candidates with complete data on the following variables: Gender, Ethnicity, ECT Objective Score, ECT Essay Score, ECT Scaled Composite Score, SAT-V, Test of Standard Written English (TSWE), and a response to the English-language proficiency (best or first) question. Note that the ECT Essay and Objective scores are unequated raw scores, while scores for the ECT Composite, SAT-V, and TSWE are equated scaled scores. As a result of the unequated essay and objective scores, trends across years for these scores are not meaningful.

For this analysis, the English First Language (EFL) group was defined as those candidates who indicated that English was their best or first language. The English Second Language (ESL) group was defined as those who indicated that another language was the one they learned to speak first or knew best. In 1983 and 1985, selection was made on the English Best Language (EBL) question ("Is English your best language?"). From 1986 to 1990, selection was made on the EFL question ("What language did you learn to speak first?"). The data were analyzed separately for each of the following groups: Male EFL, Female EFL, American Indian EFL, Asian American EFL, Black EFL, Hispanic EFL, and two ESL groups—Asian American ESL and Hispanic ESL. Only these two ESL groups were analyzed because of their sample sizes and visibility relative to other ESL groups. Since selection was not made on the basis of residence in the United States, the ESL groups may have contained foreign students. Essay readers had the impression that foreign Asians are a small but significant percentage of the Asian American group.

For each of the groups, means, standard deviations, and intercorrelations were computed for the following variables: ECT Objective, ECT Essay, ECT Composite, SAT-V, and TSWE. In addition, essay and objective score means and standard deviations were computed separately for students within each of the following objective score intervals: −17–0, 1–5, 6–10, . . . , 61–65, 66–70.

In order to study the relationship between the objective and essay measures of writing, linear regressions of essay score on objective score were conducted. In addition, analyses of homogeneity of the slopes of the subgroup regression lines were performed. In order to identify any nonlinear trends across the score scale, conditional means were also plotted.

In order to answer the primary question of this study, difference lines were calculated and plotted for each comparison of interest across years. The comparisons investigated were Male EFL/Female EFL, White EFL/American Indian EFL, White EFL/Asian American EFL, White EFL/Asian American ESL, White EFL/Black EFL, White EFL/Hispanic EFL, and White EFL/Hispanic ESL. For each comparison, the difference lines for all the years were plotted in order to identify any aberrant years in the magnitude of the differences. If the relative magnitude of the differences varied across essays, test developers were asked to

Table 1. Summary Statistics by Group: Year 1990

	ECT Obj			*ECT Essay*			*ECT Score*			*SAT-V*			*TSWE*		
Group	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
Female	28171	34.41	12.49	28149	7.80	1.65	28171	530.31	92.34	28171	525.31	94.57	28171	52.00	7.08
Male	23559	33.07	12.64	23540	7.54	1.73	23559	517.05	94.26	23559	534.86	93.97	23559	50.90	7.54
Am Ind EFL	311	28.43	12.20	311	7.12	1.80	311	481.09	91.27	311	491.22	93.25	311	48.40	7.70
As Am ESL	4253	24.99	12.94	4224	6.56	2.13	4253	449.60	105.85	4253	455.41	129.46	4253	43.50	11.40
As Am EFL	2637	31.64	12.93	2635	7.70	1.79	2637	512.20	97.04	2637	530.78	102.70	2637	50.20	8.12
Black EFL	2769	26.73	12.23	2765	7.09	1.81	2769	470.89	92.67	2769	474.04	103.14	2769	47.00	9.13
Hisp ESL	1460	22.13	11.77	1456	6.50	1.86	1460	432.26	92.27	1460	428.77	105.45	1460	43.20	10.07
Hisp EFL	1436	28.58	12.95	1435	7.33	1.78	1436	486.72	97.45	1436	491.80	101.36	1436	48.20	8.89
White EFL	43509	34.57	12.33	43476	7.73	1.66	43509	529.76	91.42	43509	534.34	91.27	43509	52.00	6.90

analyze the essays in order to identify any signs of bias, such as prompts or modes (narrative, informative, etc.).

RESULTS

Background Results

Summary statistics by ethnic and gender group for ECT scores and other variables are presented for 1990 in Tables 1 to 5 and Figures 1 to 3. These 1990 summary statistics are in the same format as those presented in Appendix A for the years from 1985 to 1989 and for 1983. The data from 1990 were chosen because this was the most recent year in the study. Discussion of 1990 results is presented to provide readers with an idea of the data on which the primary analysis is based. The discussion will also allow readers to inspect data in Appendix A for as many or as few of the remaining years as they desire.

Table 1 displays the number of students, mean, and standard deviation on the ECT tests, the SAT-V, and the TSWE by gender and ethnic group. Table 1 shows that female students obtained slightly higher scores than male students on the ECT Objective, ECT Essay, ECT Composite, and TSWE. The standardized differences (mean differences divided by average standard deviation) between the mean scores for male and female students ranged from about .10 to .15. Female students scored highest relative to male students on the essay (.15) and lowest on the objective section (.10). However, the male students received slightly higher test scores on the SAT-V, about .10 of a standard deviation.

For the ethnic groups, Table 1 indicates that the white and Asian American EFL students received the highest test scores; the Asian American ESL and Hispanic ESL students received the lowest. The standardized mean differences between ethnic groups and whites on the ECT essay are less negative (.0 to −.7) than the same standardized mean differences on the ECT objective test (−.2 to −1.0).

The correlation between the essay and objective measures is a summary statistic for use in exploring the relationship of these measures in the different groups. Unfortunately, interpretation is clouded by the different reliabilities of the measures and different variabilities of the group scores. Table 2 displays these correlations for 1990 examinees for the variables and groups of interest. The correlations for the ECT Essay score with the other tests were generally lower than those for the ECT Objective score, reflecting the higher reliability of the ECT Objective test.

The correlations between the two portions of the ECT are slightly lower for Asian American EFL and white students (.40 and .37) and higher (.47 and .55) for Hispanic

Table 2. Intercorrelations by Group: Year 1990

		ECT Objective	*ECT Essay*	*ECT Composite*	*SAT-V*	*TSWE*
ECT	F EFL		.38	.94	.78	.77
Objective	M EFL	1.00	.39	.93	.76	.75
	AI EFL		.36	.92	.79	.75
	AA EFL		.40	.93	.77	.77
	AA ESL		.55	.93	.80	.79
ECT	B EFL	.40		.68	.40	.36
Essay	H EFL	.44	1.00	.69	.41	.35
	H ESL	.47		.69	.37	.39
	W EFL	.37		.70	.41	.39
				.81	.61	.57
ECT		.93	.72		.76	.74
Composite		.94	.72	1.00	.75	.72
		.93	.76		.76	.74
		.93	.68		.76	.75
					.82	.80
SAT-V		.76	.42	.75		.69
		.78	.44	.77	1.00	.66
		.80	.50	.79		.68
		.75	.38	.74		.69
						.79
TSWE		.79	.40	.76	.72	
		.79	.42	.77	.71	1.00
		.81	.48	.79	.76	
		.75	.33	.72	.65	

Values above the main diagonal are Female EFL, Male EFL, American Indian EFL, Asian American EFL, Asian American ESL.
Values below the main diagonal are Black EFL, Hispanic EFL, Hispanic ESL, and White EFL.

and Asian American ESL students, patterns that persist across the seven years studied. These discrepancies in correlations for EFL and ESL students are only slightly smaller than those reported for separate groups of Asian American, Hispanic, and white students on the California State University English Proficiency Test (EPT) (California State University 1988, Appendix 11). While the differences in correlations may be related to the variances and distributions of scores for the ESL and EFL groups, the consistency in findings for the ECT and EPT tests makes it seem more likely that they reflect real differences for the EFL and ESL groups.

A more refined description of the relationship between the essay and objective measures is provided by the regression of ECT essay scores on ECT objective scores in each subgroup. This part of the study was done two ways: (1) fitting a straight line to the data by least squares; and (2) dividing the objective score scale into intervals and computing objective and essay score means in each interval. Table 3 and Figures 1 and 3 present the results of the first analysis and Tables 4 and 5 and Figures 2 and 3 show the results of the second analysis. (In order to shorten the length of this report, the gender results for the regressions and conditional means were put in the same figure. There were too many lines to do the same for the ethnic groups.) Table 3 shows the sample size, correlation, slope, and intercept for each group from the regression of the ECT Essay score on the ECT Objective score. Figure 1 is the plot of the regression lines for each ethnic group, and Figure 3 shows the same for the two gender groups. With groups as large as those in the present study, even very small differences between them may be statistically significant.

Table 3. Regression of ECT Essay on Objective Score by Group: Year 1990

Group	N	*Correlation*	*Slope*	*Intercept*
Female EFL	28149	.38	.050	6.068
Male EFL	23540	.39	.053	5.779
Am Ind EFL	311	.36	.053	5.621
As Am ESL	4224	.55	.091	4.290
As Am EFL	2635	.40	.056	5.930
Black EFL	2765	.41	.060	5.490
Hisp ESL	1456	.47	.075	4.844
Hisp EFL	1435	.44	.060	5.616
White EFL	43476	.37	.050	5.993

The test for equality of regression slopes and intercepts across the different ethnic groups showed statistically significant differences (at the .01 level). Table 3 and Figure 1 clearly show that the regression lines for the ESL groups are different from those for the EFL groups.

Tables 4 and 5 display ECT Essay and ECT Objective means conditional on ECT Objective score intervals, for the ethnic and gender groups respectively. (In order to reduce

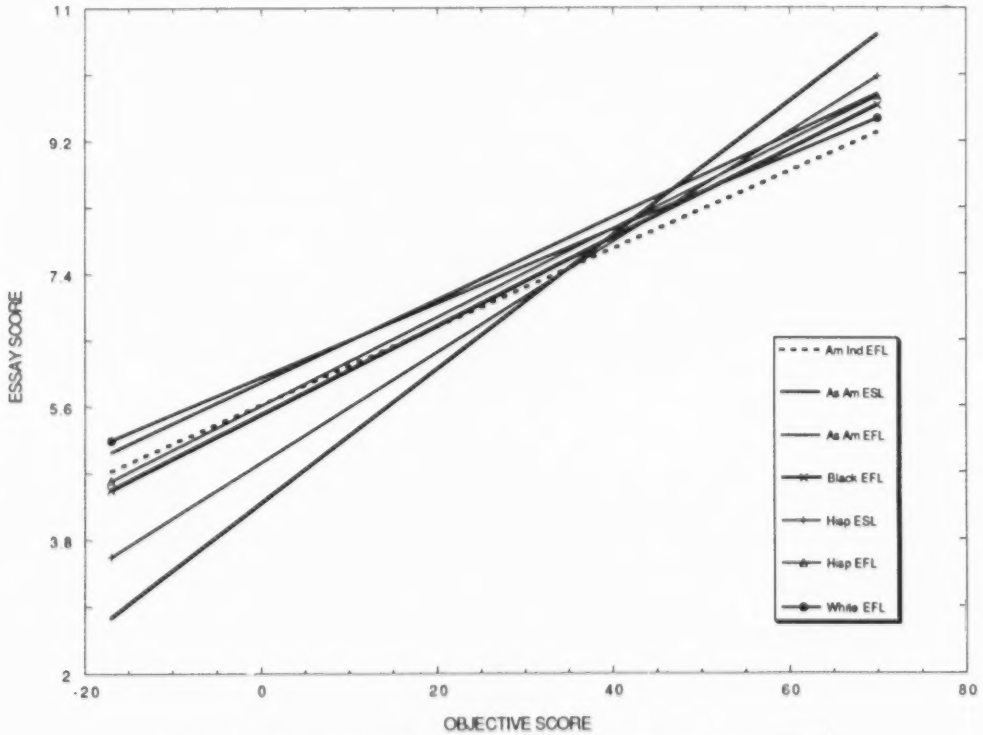

Figure 1. Regression of essay on objective by group: year 1990.

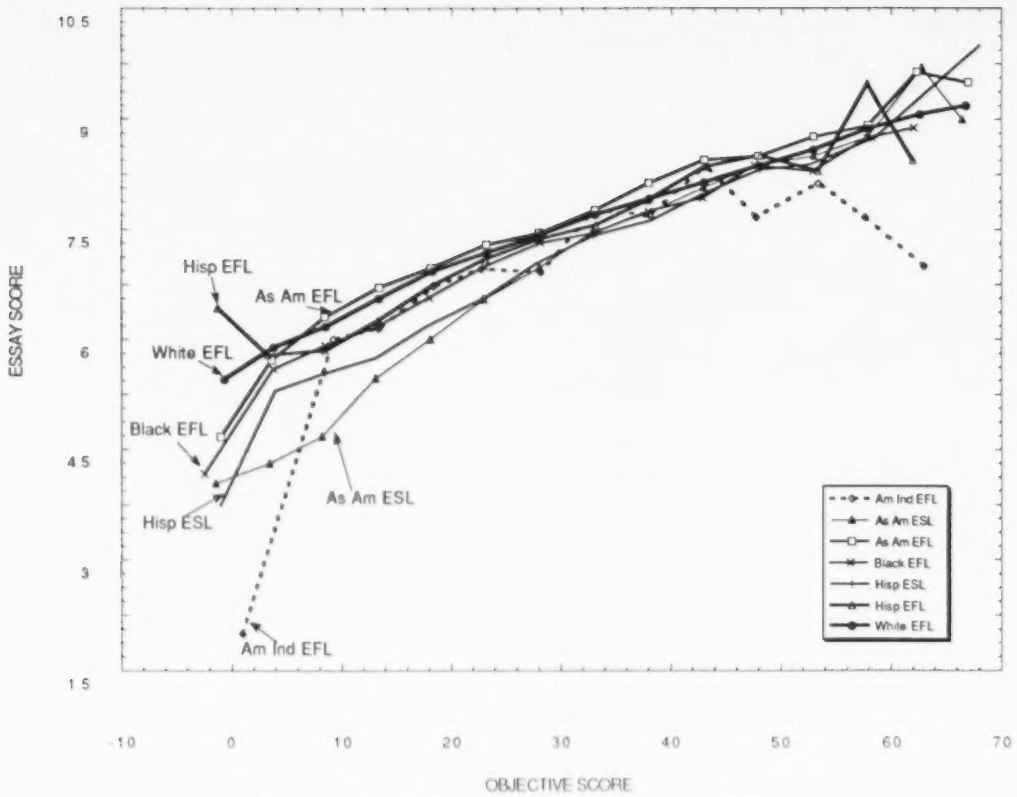

Figure 2. Essay versus objective means: year 1990.

the length of the report, conditional means tables for the gender groups contain three years of data.) Figures 2 and 3 are plots of the ethnic and gender, ECT Essay and ECT Objective conditional means, respectively.

Figure 2 indicates that the conditional means for the ESL groups are different from those for the EFL groups especially at the lower end of the score range. Figure 2 also shows how consistent most of the group conditional mean lines are in the middle of the score range and how erratic these lines become at the score extremes. The differences at the lowest and highest score levels are where the small samples in these groups could contribute to instability in the results. In fact, Table 4 shows that the sample sizes for the Asian American ESL group below an ECT Objective score of 10 are smaller than 200 and, above 50, are less than 100. The sample sizes for the Hispanic ESL group were smaller than those for the Asian American ESL group. It is important to note, however, that these same regression lines for ESL groups, at the lower ECT Objective scores, were evident across the other six years studied (Appendix A, Figures A-1A to A-6A) and correspond to results from Breland and Duran (1985). These consistent findings suggest that the ESL-EFL regression line differences at the lower ECT Objective scores are not artifacts of small sample sizes.

The conditional mean lines in Figure 2 also raise questions about the veracity of the slope of the ESL regression lines at the upper score range. As in Breland and Duran (1985), the regression lines of Figure 1 appear erroneously to suggest underprediction of ESL students at the higher score intervals. Figure 2 does not support the existence of ESL groups at the high end of the score range that would have essay scores underpredicted by the total group regression line.

The test for equality of the regression slopes and intercepts across the gender groups also indicated statistical significance (at the .01 level). Table 3 and Figure 3 indicate that differences exist in the regression lines all along the score range but especially at the lower end. Figure 3 also shows that the conditional mean differences for the gender groups are constant across the score range and have a slightly curvilinear trend.

These results suggest that given a particular objective score, especially at the lower objective scores, the corresponding estimated mean essay score is lower for ESL groups than for EFL groups. Within the EFL groups, black and Hispanic students' predicted ECT Essay scores are slightly lower than those for the white EFL group. This represents a tendency for minority students to perform less well

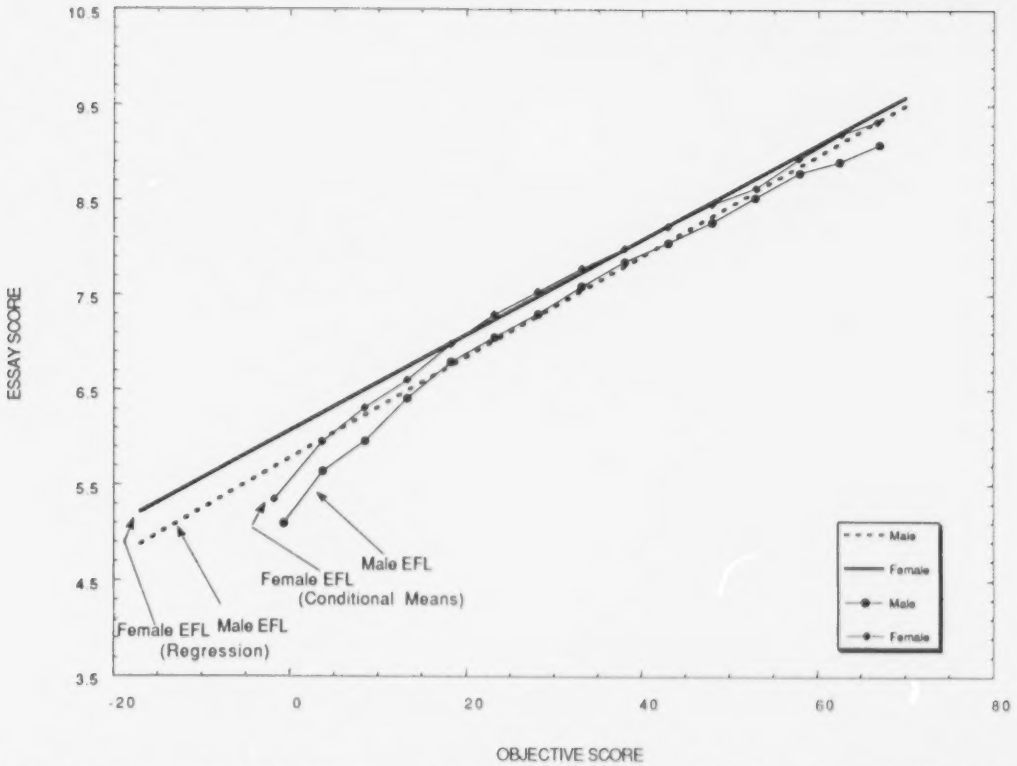

Figure 3. Essay versus objective means by sex: year 1990; regression of essay on objective by sex: year 1990.

on the essay than white EFL students with the same objective test scores. Female students with the same objective scores as male students scored higher on the essay than the male students, and this was true throughout the score scale.

Primary Results

The primary purpose of this study was to identify any variation over the years in focal group performance in relation to that of a reference group on the ECT essay. In order to investigate this, a difference line was calculated for each comparison for each year. The difference lines represented the difference between the essay performance of the focal group and that of the reference group matched on objective score level. A positive difference represented a higher focal group performance, and a negative difference represented a lower focal group performance. For each ethnic and gender group comparison, the difference lines from the regression analyses and the conditional means for the seven years were each plotted on a graph. As a result, there were 14 plots, 2 per comparison, 1 for the regression line differences and 1 for the conditional line differences, for the group comparisons over the seven years. These results are shown in Figures 4 to 17.

Perhaps the most salient feature of the difference line figures, especially for the regression line differences, is the consistency over the years of the differences between focal and reference group performance. Figure 4 demonstrates this for the male/female comparison. Across the ECT Objective score range, essay score differences are never larger than one-half a score point. Figure 5 shows the differences of the male/female conditional means lines. Figure 5 supports the consistency shown on Figure 4, especially for the ECT Objective score range from 10 to 60.

Only a few years stand out on the regression difference line plots. For example, in Figures 6 and 14, 1985 is aberrant for the American Indian/white comparison and for the Hispanic ESL/white comparison. In Figure 10, 1983 stands out for the Asian American EFL/white comparison, and in Figure 16, 1986 was different for the Hispanic EFL/white comparison. Identification of deviant performance was complicated by the small sample sizes in 1985 relative to those of the other years. In addition, selection of aberrant years was further complicated because the regression line differences were frequently not as clear on the conditional means differences plots. However, because the authors wished to err on the liberal side, to identify any possible source of bias, any differences that appeared large were

Table 4. Summary Statistics by Objective Score Interval: Year 1990

Obj Score	Am Ind EFL			As Am ESL			As Am EFL			Black EFL			Hisp ESL			Hisp EFL			White EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																					
66–70	.	.	.	2	9.00	1.41	2	9.50	0.71	.	.	.	1	10.00	.	.	.	.	57	9.19	1.96
61–65	1	7.00	.	10	9.70	1.57	22	9.64	1.71	9	8.89	1.45	.	.	.	9	8.44	1.51	536	9.07	1.66
56–60	3	7.67	2.52	37	8.76	1.67	60	8.92	1.73	28	8.75	1.84	4	8.75	1.50	21	9.48	1.36	1433	8.88	1.53
51–55	8	8.13	2.36	89	8.51	1.75	120	8.77	1.71	57	8.30	1.69	18	8.39	1.24	43	8.30	1.67	2658	8.59	1.55
46–50	21	7.67	1.59	171	8.38	1.71	208	8.50	1.71	113	8.38	1.53	28	8.32	1.16	79	8.51	1.62	3971	8.37	1.53
41–45	25	8.36	1.29	256	8.07	1.66	269	8.44	1.59	187	7.93	1.69	70	7.97	1.56	113	8.35	1.67	5198	8.14	1.51
36–40	30	7.70	1.80	314	7.71	1.55	309	8.13	1.64	241	7.75	1.69	86	7.62	1.66	161	7.89	1.65	6139	7.92	1.54
31–35	32	7.75	1.65	489	7.47	1.67	404	7.76	1.62	373	7.45	1.75	137	7.42	1.59	179	7.56	1.60	6695	7.70	1.52
26–30	53	6.92	1.52	577	6.98	1.82	354	7.45	1.62	423	7.32	1.61	161	7.04	1.62	222	7.37	1.47	6031	7.43	1.54
21–25	47	6.96	1.86	629	6.55	1.78	335	7.29	1.58	426	7.00	1.53	219	6.56	1.62	190	7.10	1.60	4870	7.18	1.55
16–20	40	6.72	1.81	565	6.00	1.94	259	6.97	1.64	381	6.57	1.67	273	6.19	1.73	174	6.74	1.61	3252	6.93	1.55
11–15	33	6.15	1.37	513	5.47	1.83	164	6.71	1.68	285	6.18	1.67	229	5.75	1.67	132	6.26	1.57	1774	6.56	1.61
6–10	17	6.00	1.84	370	4.68	1.80	87	6.31	1.63	162	5.92	1.67	150	5.54	1.69	72	5.85	1.75	675	6.18	1.64
1–5	1	2.00	.	155	4.31	1.70	39	5.72	1.82	68	5.60	1.85	61	5.30	1.74	33	5.79	1.60	163	5.89	1.60
−17–0	.	.	.	47	4.04	1.71	3	4.67	2.31	12	4.17	1.64	19	3.74	1.28	7	6.43	2.07	24	5.46	1.84
Objective Scores																					
66–70	.	.	.	2	66.50	0.71	2	67.00	1.41	.	.	.	1	68.00	.	.	.	.	57	66.81	1.03
61–65	1	63.00	.	10	62.80	1.23	22	62.32	1.49	9	62.11	1.45	.	.	.	9	62.00	1.32	536	62.65	1.44
56–60	3	57.67	1.15	37	57.86	1.58	60	57.92	1.33	28	57.82	1.54	4	58.50	1.00	21	57.86	1.28	1434	57.92	1.44
51–55	8	53.38	1.51	89	52.96	1.40	120	52.97	1.42	57	52.89	1.52	18	52.61	1.54	43	53.37	1.46	2659	52.96	1.46
46–50	21	47.76	1.37	171	47.84	1.44	208	47.91	1.40	113	47.57	1.38	28	48.11	1.42	79	48.15	1.49	3973	48.03	1.43
41–45	25	43.16	1.52	256	42.97	1.43	269	43.03	1.46	188	42.87	1.42	70	42.69	1.41	113	43.02	1.40	5201	42.99	1.43
36–40	30	38.13	1.48	315	37.79	1.42	309	37.98	1.47	241	37.93	1.39	87	38.07	1.38	161	37.83	1.45	6141	38.06	1.44
31–35	32	33.00	1.34	492	32.91	1.44	404	33.09	1.42	373	32.91	1.46	137	32.93	1.49	179	33.17	1.45	6703	33.12	1.43
26–30	53	28.15	1.42	579	28.03	1.47	354	28.00	1.43	423	28.11	1.41	161	27.84	1.36	222	28.07	1.39	6037	28.15	1.42
21–25	47	22.72	1.38	632	22.97	1.41	335	23.19	1.48	426	23.04	1.42	219	22.96	1.41	190	23.12	1.43	4873	23.20	1.41
16–20	40	18.40	1.32	568	18.08	1.40	259	18.13	1.39	381	17.98	1.43	273	17.89	1.41	174	18.32	1.42	3253	18.31	1.41
11–15	33	13.39	1.56	518	13.11	1.43	164	13.40	1.44	288	13.20	1.41	229	13.16	1.37	132	13.30	1.37	1778	13.36	1.37
6–10	17	9.24	1.39	379	8.21	1.40	88	8.42	1.48	162	8.49	1.26	150	8.44	1.39	72	8.47	1.36	676	8.53	1.35
1–5	1	1.00	.	156	3.43	1.32	40	3.60	1.19	68	3.76	1.28	62	3.97	1.07	34	3.26	1.58	164	3.79	1.25
−17–0	.	.	.	49	−1.47	1.50	3	−1.00	1.73	12	−2.50	2.15	21	−1.05	0.97	7	−1.29	1.60	24	−0.67	1.13

noted for test development inspection. As a result, the list in Appendix B was sent to test development.

A test development expert analyzed the essay prompts from the six years identified as outliers. (A complete list of the ECT essay prompts used in the years 1983 and 1985–1990 appears in Appendix C.) The expert concluded that the essay prompts for two of the six years, 1989 and 1990, showed no characteristics that would be associated with differential performance. In addition, the essay for 1988 was identified as a relatively easy topic. As a result, variation was smaller than usual, with very able students unable to exhibit their skills and less able students able to perform better than expected. This would explain the better than usual performance of the ESL groups for this year. On the other hand, possibly due to a more explicit prompt than in other years, the essay topic for 1985 resulted in a greater variety of responses than in other years. This could have caused the large number of groups that showed aberrant results for this essay. (This was also the year with the smallest sample sizes.)

Two essays were identified as containing characteristics that could have produced differential performance. In 1986, the topic involved heroes who exemplified significant values. This topic may have favored those with an informed overview of popular cultural values. Relatively low performance for black, Hispanic, and Asian American ESL students was identified for this essay. In 1983, the topic was very abstract and slightly ironic or paradoxical in nature. Abstract topics are sometimes harder for students with minimal language skills. Relatively low performance for Asian American EFL and ESL students was identified for this essay.

CONCLUSION

This study provided additional evidence consistent with several findings in the research literature about the relationship of essay and multiple-choice measures of English-language skills. Although white and female students out-

Table 5. Summary Statistics by Objective Score Interval by Sex: Years 1990, 1989, 1988

Obj Score	1990 Data						1989 Data						1988 Data					
	Male EFL			Female EFL			Male EFL			Female EFL			Male EFL			Female EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																		
66–70	23	9.09	1.78	39	9.33	1.98	51	9.65	1.73	68	9.24	1.58	41	9.29	1.57	57	8.89	1.89
61–65	257	8.91	1.73	338	9.20	1.58	324	9.14	1.49	476	9.18	1.54	303	8.97	1.60	398	9.14	1.60
56–60	673	8.79	1.58	931	8.94	1.52	822	8.92	1.62	1183	8.87	1.60	776	8.64	1.65	1115	8.77	1.60
51–55	1258	8.53	1.60	1703	8.63	1.54	1450	8.67	1.62	1992	8.65	1.55	1684	8.31	1.67	2060	8.48	1.59
46–50	1880	8.27	1.59	2608	8.46	1.50	2174	8.33	1.60	2888	8.35	1.50	2364	8.04	1.65	3209	8.26	1.56
41–45	2534	8.05	1.56	3374	8.22	1.50	2841	8.10	1.58	3754	8.15	1.50	3052	7.82	1.65	4022	8.01	1.55
36–40	3149	7.85	1.57	3862	7.99	1.54	3496	7.89	1.54	4295	7.89	1.50	3585	7.53	1.57	4476	7.82	1.54
31–35	3535	7.59	1.57	4281	7.78	1.51	3596	7.59	1.58	4409	7.68	1.48	3744	7.31	1.58	4677	7.59	1.54
26–30	3343	7.30	1.58	3881	7.53	1.52	3383	7.30	1.58	4023	7.43	1.50	3588	7.06	1.60	4235	7.31	1.54
21–25	2813	7.05	1.60	3182	7.29	1.51	2902	7.04	1.59	3241	7.16	1.54	2991	6.72	1.61	3378	7.07	1.56
16–20	2090	6.79	1.61	2080	6.98	1.53	2003	6.75	1.60	2103	6.87	1.53	2196	6.46	1.63	2233	6.81	1.55
11–15	1227	6.41	1.66	1222	6.60	1.58	1067	6.33	1.65	1064	6.52	1.60	1372	6.10	1.60	1207	6.50	1.60
6–10	567	5.96	1.71	476	6.31	1.58	425	6.11	1.72	467	6.23	1.56	648	5.73	1.72	572	6.10	1.68
1–5	170	5.64	1.74	146	5.95	1.63	124	5.52	1.80	129	6.02	1.80	212	5.46	1.66	182	5.80	1.63
−17–0	21	5.10	2.10	26	5.35	1.81	16	4.69	1.54	13	5.46	1.56	30	4.30	1.60	39	5.15	1.76
Objective Scores																		
66–70	23	67.04	1.07	39	66.79	1.06	51	67.00	1.20	68	67.21	1.34	41	66.61	1.00	57	66.82	1.15
61–65	257	62.54	1.43	338	62.70	1.43	324	62.76	1.49	476	62.75	1.46	303	62.78	1.47	398	62.67	1.51
56–60	674	57.96	1.41	931	57.89	1.45	822	57.86	1.49	1183	57.95	1.46	776	57.90	1.42	1115	57.92	1.45
51–55	1258	52.93	1.45	1704	52.99	1.46	1450	52.99	1.46	1992	53.00	1.44	1684	53.00	1.46	2060	53.02	1.46
46–50	1880	48.01	1.43	2610	48.01	1.42	2174	48.07	1.44	2888	48.04	1.45	2364	48.08	1.43	3209	48.10	1.44
41–45	2536	42.98	1.42	3376	42.99	1.44	2843	43.10	1.42	3755	43.06	1.42	3052	43.13	1.41	4022	43.05	1.43
36–40	3149	38.05	1.45	3864	38.04	1.43	3496	38.09	1.43	4296	38.10	1.43	3585	38.10	1.43	4476	38.08	1.42
31–35	3540	33.11	1.42	4284	33.11	1.43	3596	33.12	1.41	4409	33.11	1.42	3744	33.11	1.42	4677	33.13	1.43
26–30	3345	28.14	1.41	3886	28.13	1.42	3383	28.11	1.43	4024	28.17	1.43	3588	28.13	1.42	4235	28.18	1.42
21–25	2814	23.20	1.42	3184	23.18	1.41	2902	23.16	1.41	3241	23.22	1.41	2991	23.13	1.42	3378	23.19	1.42
16–20	2090	18.25	1.43	2081	18.29	1.39	2003	18.28	1.41	2103	18.33	1.39	2196	18.24	1.40	2233	18.31	1.39
11–15	1232	13.35	1.39	1224	13.33	1.37	1067	13.35	1.41	1064	13.40	1.35	1373	13.31	1.40	1207	13.34	1.42
6–10	569	8.54	1.33	476	8.50	1.36	425	8.58	1.33	467	8.64	1.33	648	8.35	1.39	572	8.44	1.38
1–5	171	3.72	1.27	148	3.71	1.32	124	3.81	1.27	129	3.65	1.23	212	3.64	1.20	182	3.50	1.37
−17–0	21	−0.67	1.06	26	−1.77	1.92	16	−1.44	1.63	13	−1.00	1.63	30	−1.80	2.06	39	−1.69	2.02

performed the other groups on the ECT, most focal groups performed better relative to their reference group on the essay than on the objective measure of writing. Both female-male and ethnic-white differences are smaller on the essay than on the objective test. Specifically, this study extends the Petersen and Livingston (1982) findings for the ECT with Essay over seven additional years. This study also provided further evidence of the differential performance of ethnic focal groups on essays when matched with the performance of reference groups on objective tests. But just as important, it showed that differential performance depended on score level. In the middle objective score levels, the essay performance of the ethnic focal and the white reference groups appears equal, but overprediction of essay scores clearly occurs for most focal groups at the lower score levels. These findings support Petersen and Livingston (1982) for certain EFL groups and Breland and Duran (1985) for ESL groups. This study also supported the Breland and Griswold (1982) conclusion that underprediction of focal groups at the higher objective score levels is erroneously suggested by the focal group regression line. In addition, this study is unique in demonstrating these findings across a number of years with different groups of examinees. The large sample sizes, the number of years, and the consistency of the results build confidence in these findings.

Moreover, the results showed a remarkable consistency over the years in the performance differences between the focal and reference groups. This finding suggests that test developers have been successful in using essay prompts that generally do not cause groups to perform differentially. Several outliers were identified, however; of the six essay outliers identified in differences plotted over the years, two essays contained no characteristics that could be associated with the differential performance, and two essays had topics that resulted in unusually large or small variations in performance that year for most groups.

Two essays appeared to contain characteristics that may have influenced differential performance. In one, the topic of heroes and values may have favored groups more familiar with cultural values. In the other essay, the combi-

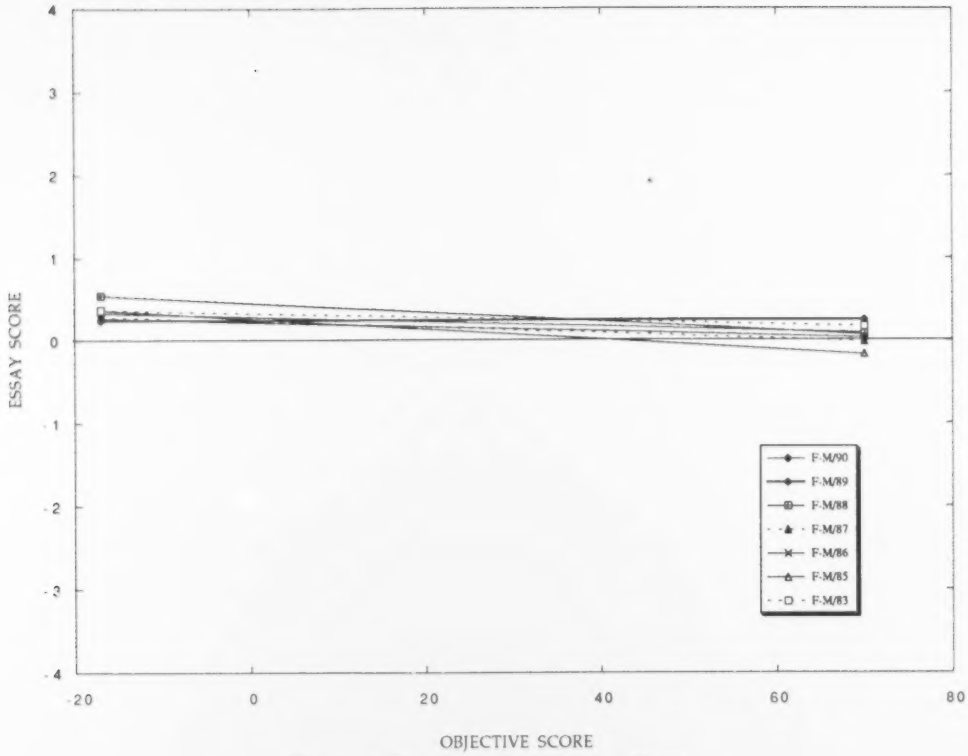

Figure 4. Female-male difference lines.

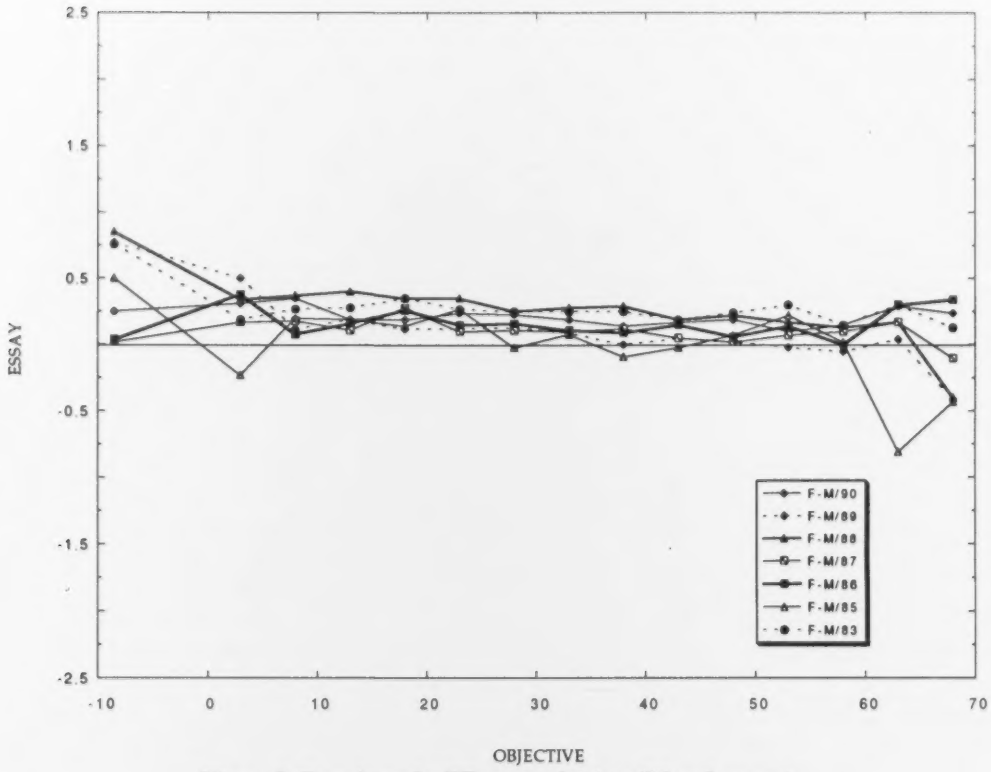

Figure 5. Female-male difference plot (conditional means).

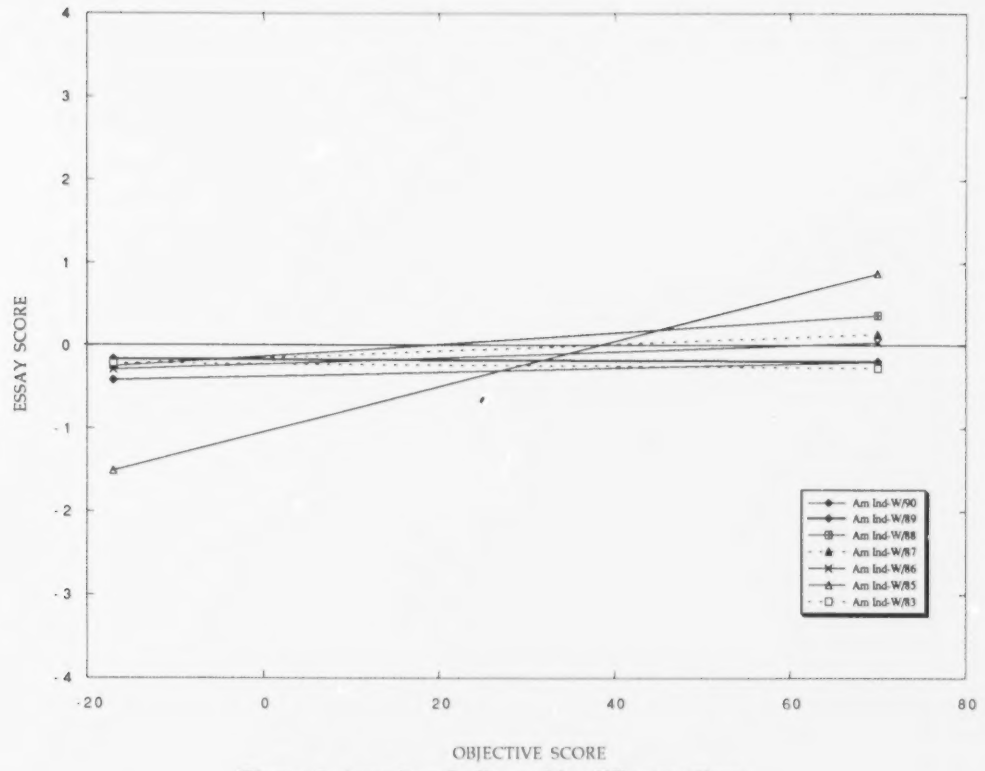

Figure 6. American Indian–white difference lines.

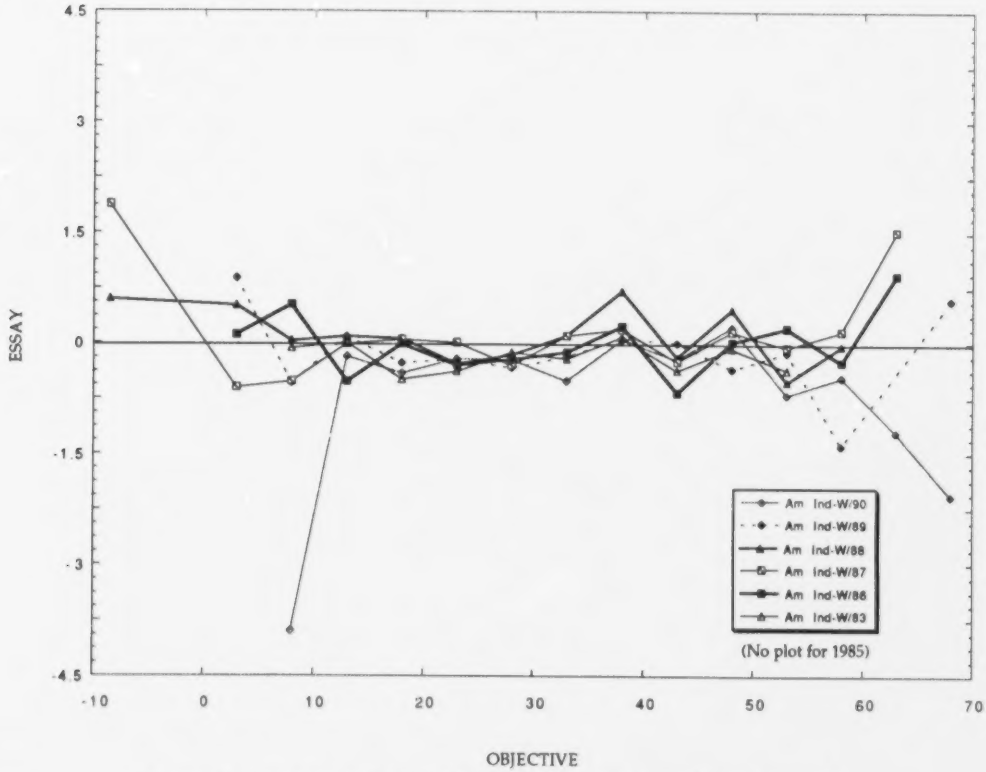

Figure 7. American Indian–white difference plot (conditional means).

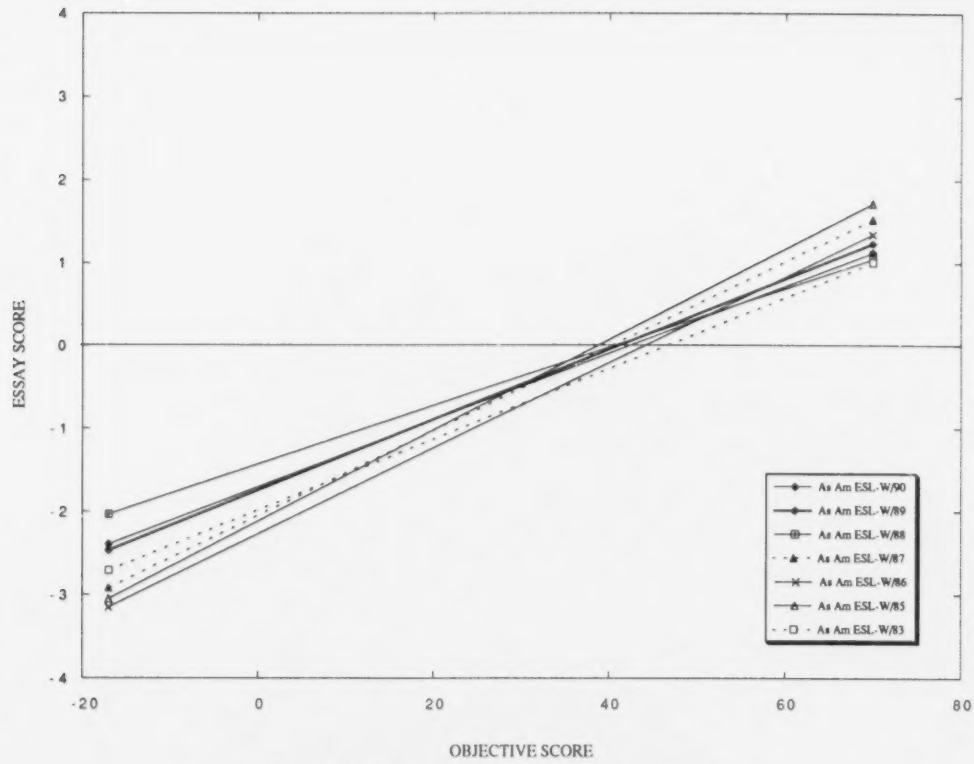

Figure 8. Asian ESL–white difference lines.

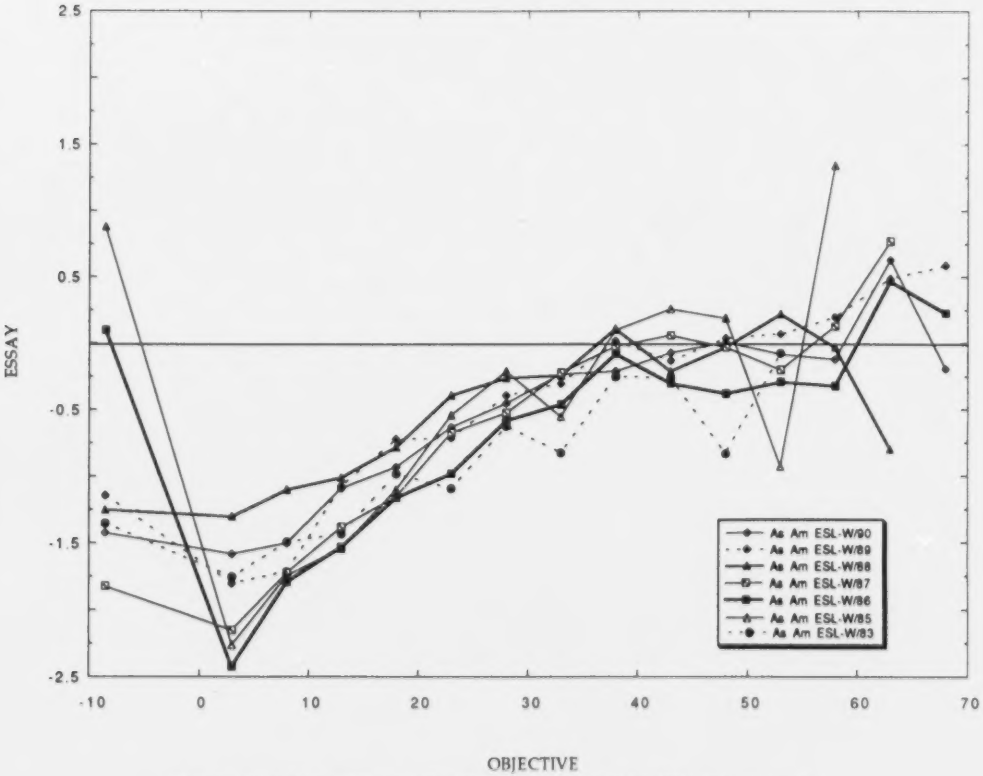

Figure 9. Asian ESL–white difference plot (conditional means).

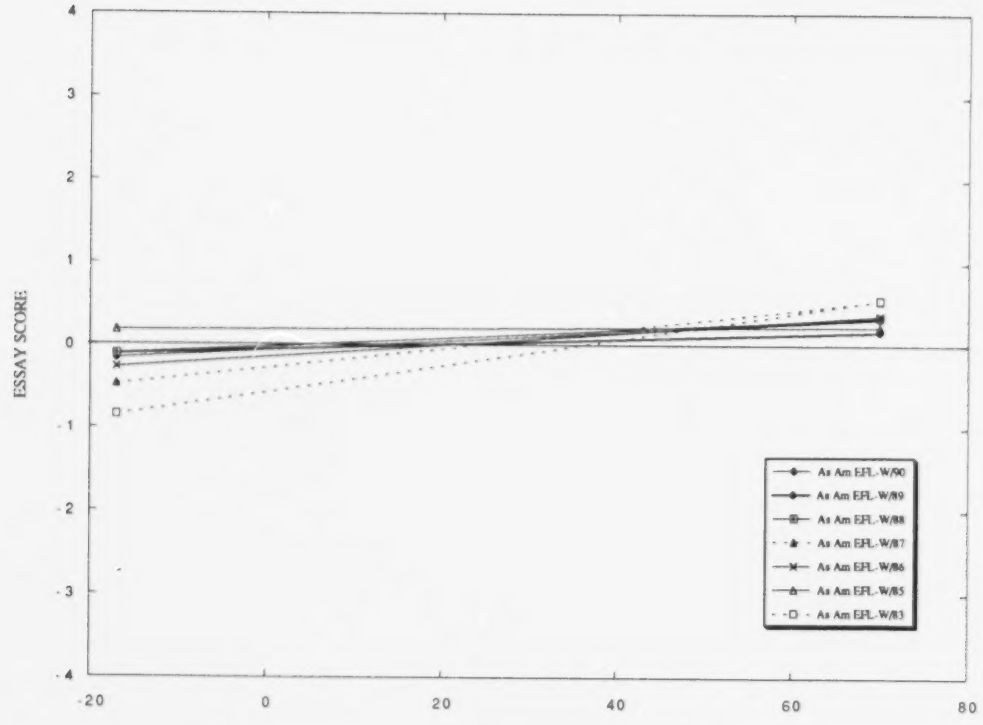

Figure 10. Asian EFL–white difference lines.

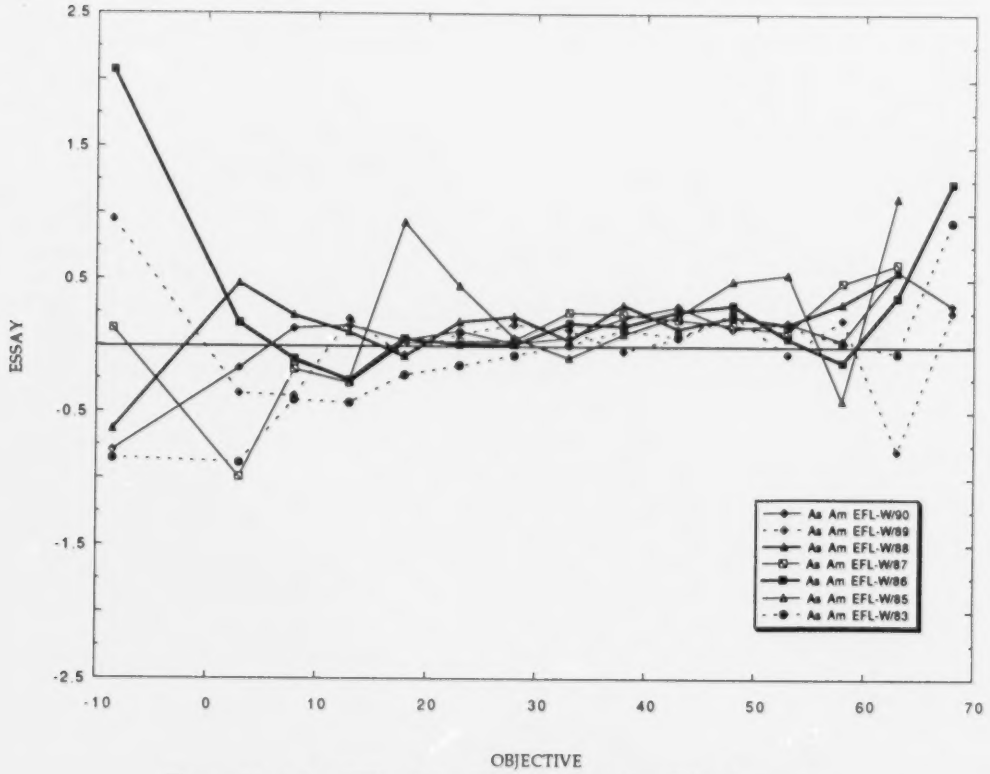

Figure 11. Asian EFL–white difference plot (conditional means).

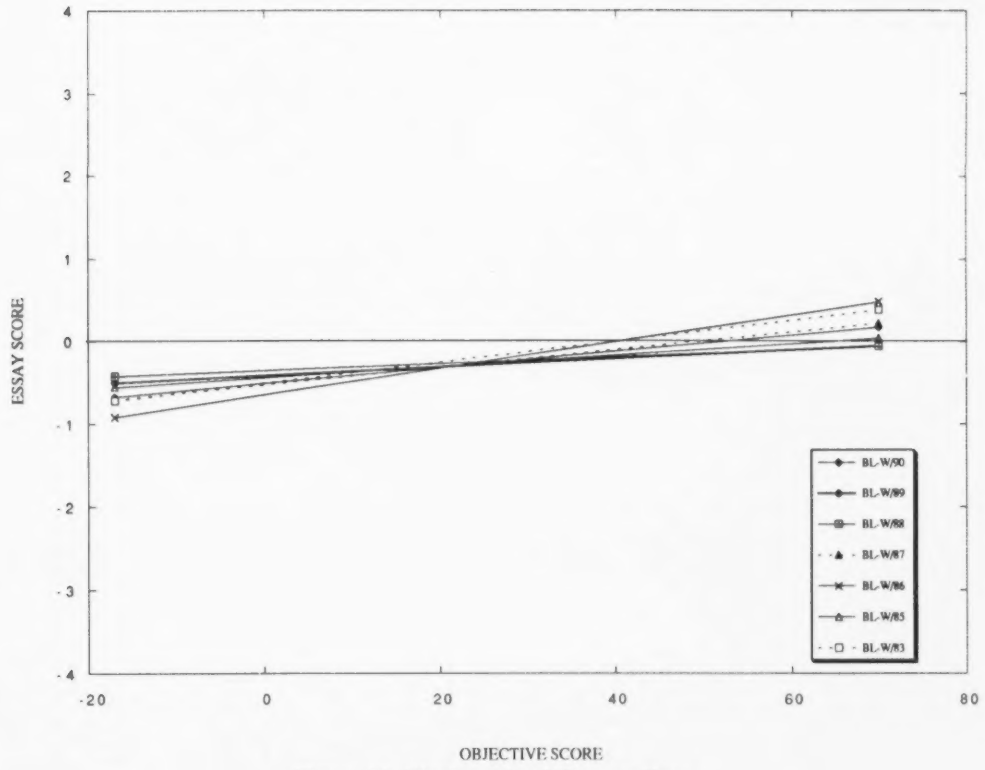

Figure 12. Black–white difference lines.

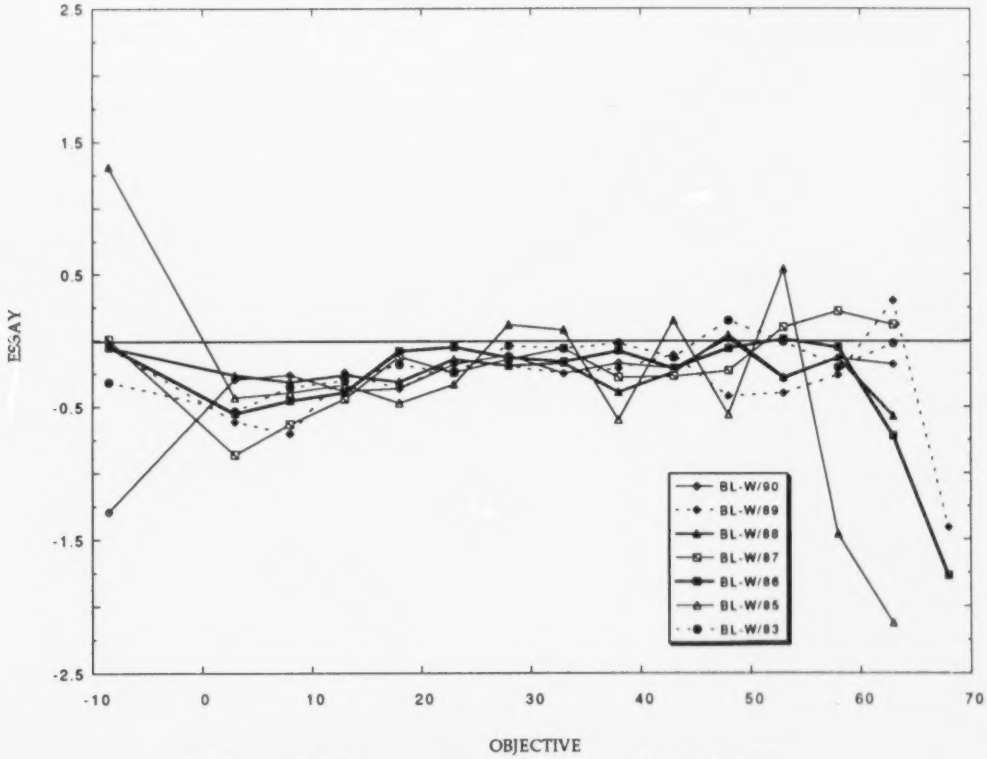

Figure 13. Black–white difference plot (conditional means).

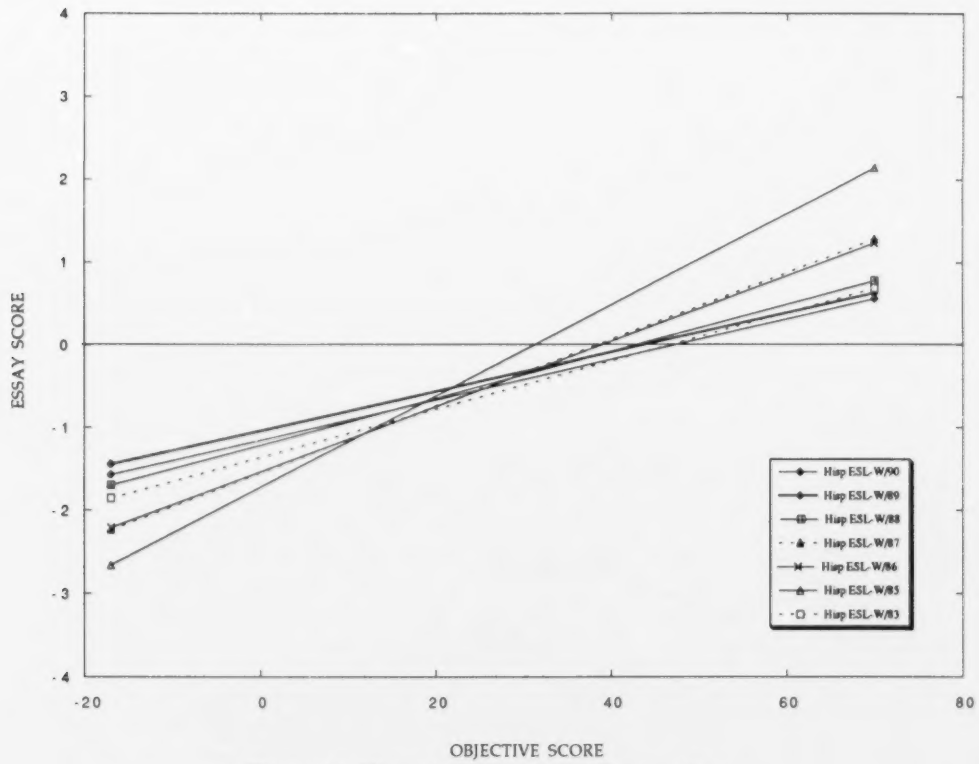

Figure 14. Hispanic ESL–white difference lines.

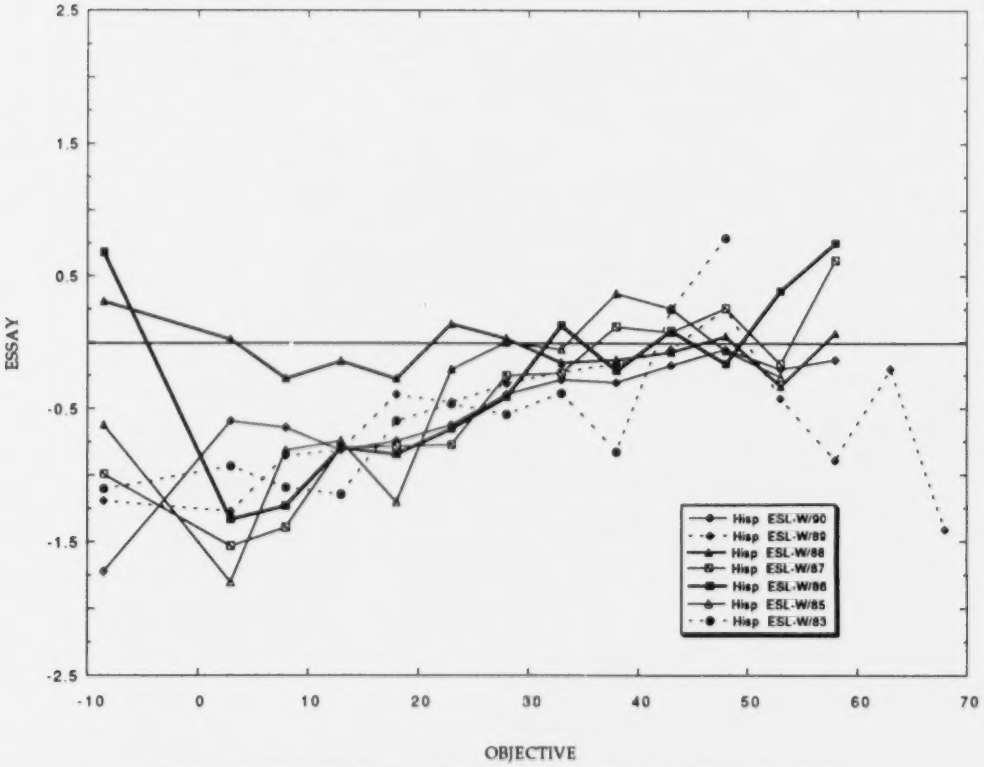

Figure 15. Hispanic ESL–white difference plot (conditional means).

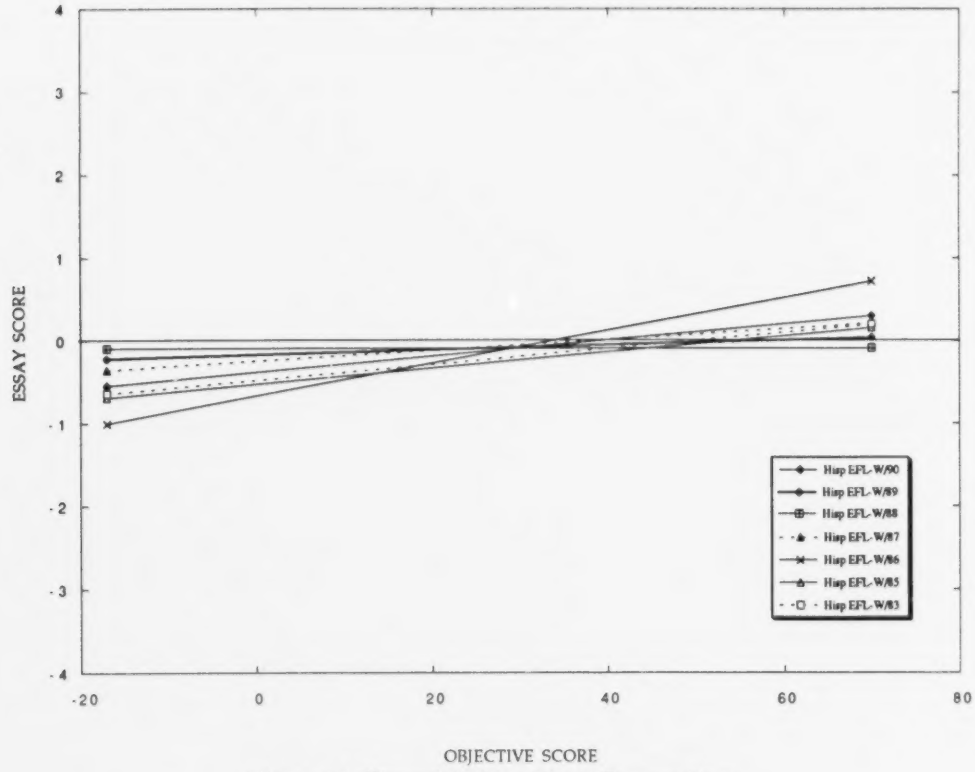

Figure 16. Hispanic EFL–white difference lines.

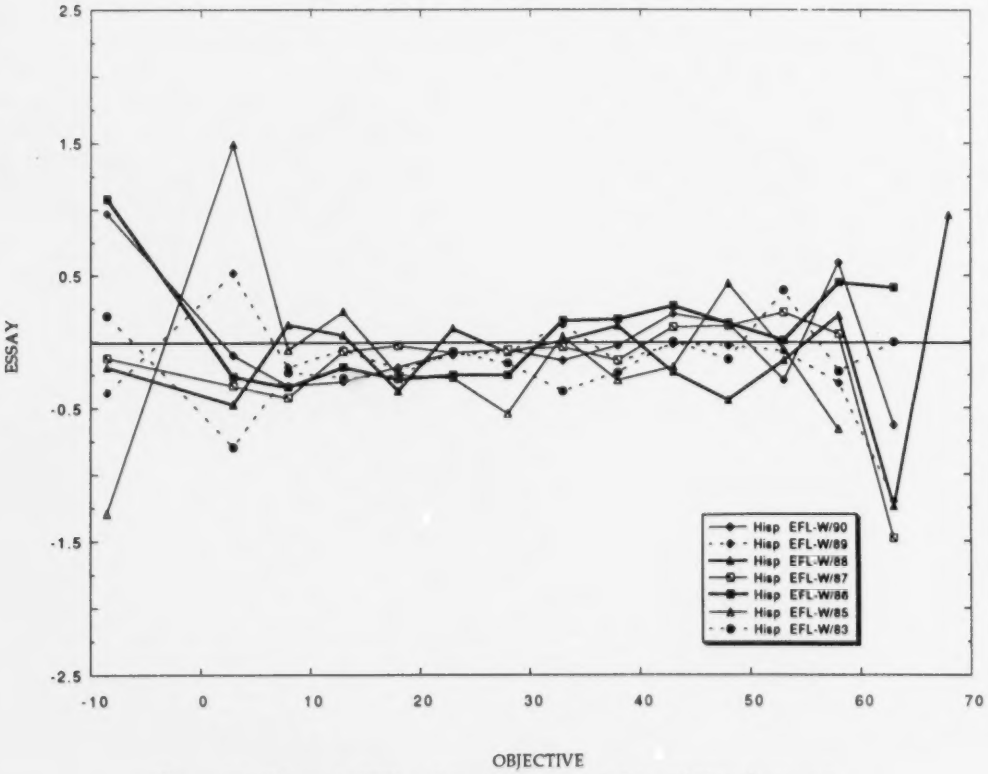

Figure 17. Hispanic EFL–white difference plot (conditional means).

nation of an abstract topic with an ironic tone may have caused differential performance for those with lower language skills. These results add to the findings of Mazzeo et al. (1991) in identifying essay features associated with differential performance.

The identification of these features emphasizes the need to gain a better understanding of the essay performance of ESL and minority students. This understanding should be increased in two ways. First, more essays should be analyzed to identify other characteristics of differential essay performance. Second, more research is needed to understand the essay performance of ESL and minority groups.

In summary, the purpose of this study was to determine whether essay characteristics interact with the performance of different groups. For the ECT essays examined, only two showed signs of the differential performance of groups that were subsequently associated with specific essay features. This result reflects the remarkable consistency over the years in differential performance between groups on the ECT Essay. It is important, however, that the findings for the two essays be extended not only through analysis of more essays but also by exploring the nature of ESL and minority student performance on essays.

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APPENDIX A. SUMMARY STATISTICS FOR ECT

Table A-1A. Summary Statistics by Group: Year 1989

	ECT Obj			*ECT Essay*			*ECT Score*			*SAT-V*			*TSWE*		
Group	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
Female EFL	30108	35.36	12.55	30105	7.75	1.65	30108	535.38	92.32	30108	521.09	94.02	30108	52.10	7.02
Male EFL	24676	34.23	12.58	24674	7.62	1.74	24676	526.14	94.10	24676	535.68	94.56	24676	51.10	7.43
Am Ind EFL	360	30.08	11.52	360	7.29	1.65	360	494.92	85.36	360	487.06	93.89	360	48.83	8.06
As Am ESL	4133	24.21	13.47	4132	6.44	2.21	4133	444.61	109.61	4133	441.96	127.62	4133	41.87	11.24
As Am EFL	2521	31.87	12.93	2521	7.61	1.78	2521	512.28	96.09	2521	519.30	100.48	2521	49.55	8.22
Black EFL	3029	28.42	11.97	3028	7.11	1.78	3029	481.82	89.82	3029	471.90	96.79	3029	47.28	8.67
Hisp ESL	1402	24.51	11.87	1401	6.72	1.89	1402	451.51	93.01	1402	425.73	105.02	1402	43.99	9.72
Hisp EFL	1339	29.66	12.27	1339	7.36	1.72	1339	494.10	90.95	1339	490.49	99.85	1339	48.67	8.44
White EFL	46543	35.58	12.40	46539	7.75	1.67	46543	536.61	91.92	46543	532.76	92.20	46543	52.12	6.86

Table A-1B. Intercorrelations by Group: Year 1989

	ECT Objective	*ECT Essay*	*ECT Composite*	*SAT-V*	*TSWE*
ECT	1.0000	.39	.94	.77	.77
Objective		.41	.93	.76	.76
		.37	.93	.71	.76
		.41	.93	.78	.79
		.58	.94	.81	.82
ECT					
Essay	.39	1.0000	.68	.40	.37
	.40		.70	.40	.38
	.48		.69	.37	.34
	.39		.70	.41	.40
			.82	.62	.62
ECT					
Composite	.93	.71	1.0000	.76	.74
	.93	.70		.74	.73
	.93	.77		.70	.73
	.94	.69		.77	.76
				.82	.83
SAT-V	.75	.40	.74	1.0000	.69
	.78	.41	.77		.67
	.77	.47	.76		.67
	.75	.38	.74		.71
					.80
TSWE	.79	.39	.76	.73	1.0000
	.80	.38	.77	.72	
	.79	.52	.79	.75	
	.76	.36	.73	.65	

Values above the main diagonal are Female EFL, Male EFL, American Indian EFL, Asian American EFL, and Asian American ESL.
Values below the main diagonal are Black EFL, Hispanic EFL, Hispanic ESL, and White EFL.

Table A-1C. Summary Statistics by Objective Score Interval: Year 1989

Obj Score	Am Ind EFL			As Am ESL			As Am EFL			Black EFL			Hisp ESL			Hisp EFL			White EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																					
66–70	1	10.00	.	3	10.00	0.00	3	9.67	2.52	1	8.00	.	1	8.00	.	.	.	.	111	9.41	1.67
61–65	.	.	.	13	9.69	1.25	17	8.41	1.23	8	9.50	1.31	2	9.00	2.83	3	8.00	1.73	746	9.20	1.50
56–60	2	7.50	2.12	44	9.09	1.54	65	9.09	1.49	32	8.63	1.74	10	8.00	1.76	12	8.58	2.07	1845	8.89	1.62
51–55	11	8.55	1.69	84	8.74	1.34	124	8.61	1.66	78	8.27	1.90	20	8.25	1.12	43	8.60	1.66	3101	8.67	1.57
46–50	25	8.00	1.26	158	8.39	1.65	185	8.59	1.44	156	7.93	1.72	44	8.61	1.91	82	8.32	1.60	4515	8.35	1.53
41–45	30	8.13	1.48	222	8.00	1.82	265	8.19	1.61	224	8.02	1.62	59	8.08	1.59	139	8.11	1.48	5811	8.13	1.53
36–40	37	7.97	1.61	338	7.92	1.63	302	7.86	1.54	322	7.69	1.50	109	7.74	1.61	158	7.75	1.64	6825	7.90	1.52
31–35	64	7.47	1.49	420	7.35	1.71	384	7.77	1.68	415	7.40	1.56	169	7.43	1.53	175	7.78	1.58	6842	7.65	1.51
26–30	56	7.05	1.46	506	6.99	1.85	331	7.54	1.61	487	7.19	1.65	199	7.07	1.50	205	7.30	1.65	6219	7.38	1.51
21–25	58	6.90	1.65	554	6.41	1.83	332	7.21	1.68	484	6.96	1.62	222	6.67	1.70	179	7.02	1.54	5007	7.12	1.56
16–20	41	6.59	1.82	546	6.14	1.95	242	6.79	1.63	365	6.50	1.67	220	6.47	1.75	158	6.66	1.37	3235	6.86	1.55
11–15	21	6.52	1.47	574	5.36	1.85	150	6.63	1.77	274	6.19	1.70	196	5.62	1.68	110	6.37	1.74	1531	6.43	1.59
6–10	10	5.80	1.03	383	4.63	1.85	81	5.96	1.63	139	5.64	1.67	101	5.49	1.76	54	6.15	1.76	583	6.34	1.61
1–5	4	6.75	0.96	231	4.07	1.61	39	5.51	2.04	38	5.26	1.91	42	4.60	1.74	18	6.39	1.29	148	5.87	1.75
−17–0	.	.	.	56	3.91	1.55	1	6.00	.	5	5.00	2.00	7	3.86	1.57	3	4.67	3.06	20	5.05	1.32
Objective Scores																					
66–70	1	66.00	.	3	66.67	1.15	3	67.67	1.53	1	67.00	.	1	66.00	.	.	.	.	111	67.11	1.30
61–65	.	.	.	13	61.77	1.09	17	63.29	1.53	8	63.50	1.51	2	62.00	1.41	3	61.67	1.15	746	62.74	1.47
56–60	2	57.00	1.41	44	58.32	1.27	65	57.95	1.53	32	57.56	1.32	10	57.60	1.26	12	57.25	1.29	1845	57.93	1.48
51–55	11	52.82	1.66	84	52.77	1.37	124	52.95	1.39	78	53.08	1.38	20	52.95	1.57	43	53.33	1.41	3101	52.99	1.45
46–50	25	48.00	1.58	158	47.92	1.50	185	48.17	1.48	156	47.91	1.38	44	47.59	1.30	82	48.10	1.39	4515	48.06	1.45
41–45	30	42.90	1.47	222	43.05	1.51	265	43.02	1.37	224	42.96	1.43	59	43.12	1.52	139	42.89	1.52	5814	43.08	1.42
36–40	37	38.30	1.43	339	37.97	1.41	302	38.01	1.44	322	37.96	1.45	109	38.00	1.47	158	38.18	1.42	6826	38.10	1.43
31–35	64	33.36	1.36	420	33.00	1.43	384	33.13	1.39	415	33.00	1.42	169	32.91	1.44	175	33.07	1.38	6842	33.12	1.42
26–30	56	28.09	1.31	506	28.10	1.42	331	28.09	1.40	488	28.11	1.45	199	27.88	1.39	205	28.29	1.38	6219	28.15	1.43
21–25	58	22.97	1.28	554	23.02	1.44	332	23.10	1.40	484	23.13	1.38	222	22.99	1.40	179	23.16	1.37	5007	23.20	1.42
16–20	41	18.20	1.49	546	18.01	1.45	242	18.29	1.35	365	18.17	1.42	220	18.10	1.38	158	18.22	1.45	3235	18.32	1.40
11–15	21	13.14	1.35	574	13.08	1.39	150	13.43	1.33	274	13.32	1.44	196	13.29	1.39	110	13.36	1.35	1531	13.37	1.38
6–10	10	8.60	1.17	383	8.23	1.46	81	8.46	1.42	139	8.44	1.36	102	8.33	1.40	54	8.69	1.41	583	8.69	1.30
1–5	4	3.50	1.91	231	3.56	1.28	39	3.54	1.23	38	3.68	1.21	42	3.10	1.46	18	3.72	1.27	148	3.80	1.25
−17–0	.	.	.	56	−1.52	1.57	1	0.00	.	5	−0.80	0.45	7	−1.86	1.68	3	−3.00	1.73	20	−1.15	1.69

Table A-1D. Summary Statistics by Objective Score Interval by Sex: Years 1990, 1989, 1988

Obj Score	1990 Data						1989 Data						1988 Data					
	Male EFL			Female EFL			Male EFL			Female EFL			Male EFL			Female EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																		
66–70	23	9.09	1.78	39	9.33	1.98	51	9.65	1.73	68	9.24	1.58	41	9.29	1.57	57	8.89	1.89
61–65	257	8.91	1.73	338	9.20	1.58	324	9.14	1.49	476	9.18	1.54	303	8.97	1.60	398	9.14	1.60
56–60	673	8.79	1.58	931	8.94	1.52	822	8.92	1.62	1183	8.87	1.60	776	8.64	1.65	1115	8.77	1.60
51–55	1258	8.53	1.60	1703	8.63	1.54	1450	8.67	1.62	1992	8.65	1.55	1684	8.31	1.67	2060	8.48	1.59
46–50	1880	8.27	1.59	2608	8.46	1.50	2174	8.33	1.60	2888	8.35	1.50	2364	8.04	1.65	3209	8.26	1.56
41–45	2534	8.05	1.56	3374	8.22	1.50	2841	8.10	1.58	3754	8.15	1.50	3052	7.82	1.65	4022	8.01	1.55
36–40	3149	7.85	1.57	3862	7.99	1.54	3496	7.89	1.54	4295	7.89	1.50	3585	7.53	1.57	4476	7.82	1.54
31–35	3535	7.59	1.57	4281	7.78	1.51	3596	7.59	1.58	4409	7.68	1.48	3744	7.31	1.58	4677	7.59	1.54
26–30	3343	7.30	1.58	3881	7.53	1.52	3383	7.30	1.58	4023	7.43	1.50	3588	7.06	1.60	4235	7.31	1.54
21–25	2813	7.05	1.60	3182	7.29	1.51	2902	7.04	1.59	3241	7.16	1.54	2991	6.72	1.61	3378	7.07	1.56
16–20	2090	6.79	1.61	2080	6.98	1.53	2003	6.75	1.60	2103	6.87	1.53	2196	6.46	1.63	2233	6.81	1.55
11–15	1227	6.41	1.66	1222	6.60	1.58	1067	6.33	1.65	1064	6.52	1.60	1372	6.10	1.60	1207	6.50	1.60
6–10	567	5.96	1.71	476	6.31	1.58	425	6.11	1.72	467	6.23	1.56	648	5.73	1.72	572	6.10	1.68
1–5	170	5.64	1.74	146	5.95	1.63	124	5.52	1.80	129	6.02	1.80	212	5.46	1.66	182	5.80	1.63
−17–0	21	5.10	2.10	26	5.35	1.81	16	4.69	1.54	13	5.46	1.56	30	4.30	1.60	39	5.15	1.76
Objective Scores																		
66–70	23	67.04	1.07	39	66.79	1.06	51	67.00	1.20	68	67.21	1.34	41	66.61	1.00	57	66.82	1.15
61–65	257	62.54	1.43	338	62.70	1.43	324	62.76	1.49	476	62.75	1.46	303	62.78	1.47	398	62.67	1.51
56–60	674	57.96	1.41	931	57.89	1.45	822	57.86	1.49	1183	57.95	1.46	776	57.90	1.42	1115	57.92	1.45
51–55	1258	52.93	1.45	1704	52.99	1.46	1450	52.99	1.46	1992	53.00	1.44	1684	53.00	1.46	2060	53.02	1.46
46–50	1880	48.01	1.43	2610	48.01	1.42	2174	48.07	1.44	2888	48.04	1.45	2364	48.08	1.43	3209	48.10	1.44
41–45	2536	42.98	1.42	3376	42.99	1.44	2843	43.10	1.42	3755	43.06	1.42	3052	43.13	1.41	4022	43.05	1.43
36–40	3149	38.05	1.45	3864	38.04	1.43	3496	38.09	1.43	4296	38.10	1.43	3585	38.10	1.43	4476	38.08	1.42
31–35	3540	33.11	1.42	4284	33.11	1.43	3596	33.12	1.41	4409	33.11	1.42	3744	33.11	1.42	4677	33.13	1.43
26–30	3345	28.14	1.41	3886	28.13	1.42	3383	28.11	1.43	4024	28.17	1.43	3588	28.13	1.42	4235	28.18	1.42
21–25	2814	23.20	1.42	3184	23.18	1.41	2902	23.16	1.41	3241	23.22	1.41	2991	23.13	1.42	3378	23.19	1.42
16–20	2090	18.25	1.43	2081	18.29	1.39	2003	18.28	1.41	2103	18.33	1.39	2196	18.24	1.40	2233	18.31	1.39
11–15	1232	13.35	1.39	1224	13.33	1.37	1067	13.35	1.41	1064	13.40	1.35	1373	13.31	1.40	1207	13.34	1.42
6–10	569	8.54	1.33	476	8.50	1.36	425	8.58	1.33	467	8.64	1.33	648	8.35	1.39	572	8.44	1.38
1–5	171	3.72	1.27	148	3.71	1.32	124	3.81	1.27	129	3.65	1.23	212	3.64	1.20	182	3.50	1.37
−17–0	21	−0.67	1.06	26	−1.77	1.92	16	−1.44	1.63	13	−1.00	1.63	30	−1.80	2.06	39	−1.69	2.02

Table A-1E. Regression of ECT Essay on Objective Score by Group: Year 1989

Group	N	Correlation	Slope	Intercept
Female EFL	30105	.39	.051	5.943
Male EFL	24674	.41	.056	5.696
Am Ind EFL	360	.37	.052	5.714
As Am ESL	4132	.58	.095	4.136
As Am EFL	2521	.41	.056	5.825
Black EFL	3028	.39	.058	5.470
Hisp ESL	1401	.48	.076	4.843
Hisp EFL	1339	.40	.056	5.715
White EFL	46539	.39	.053	5.879

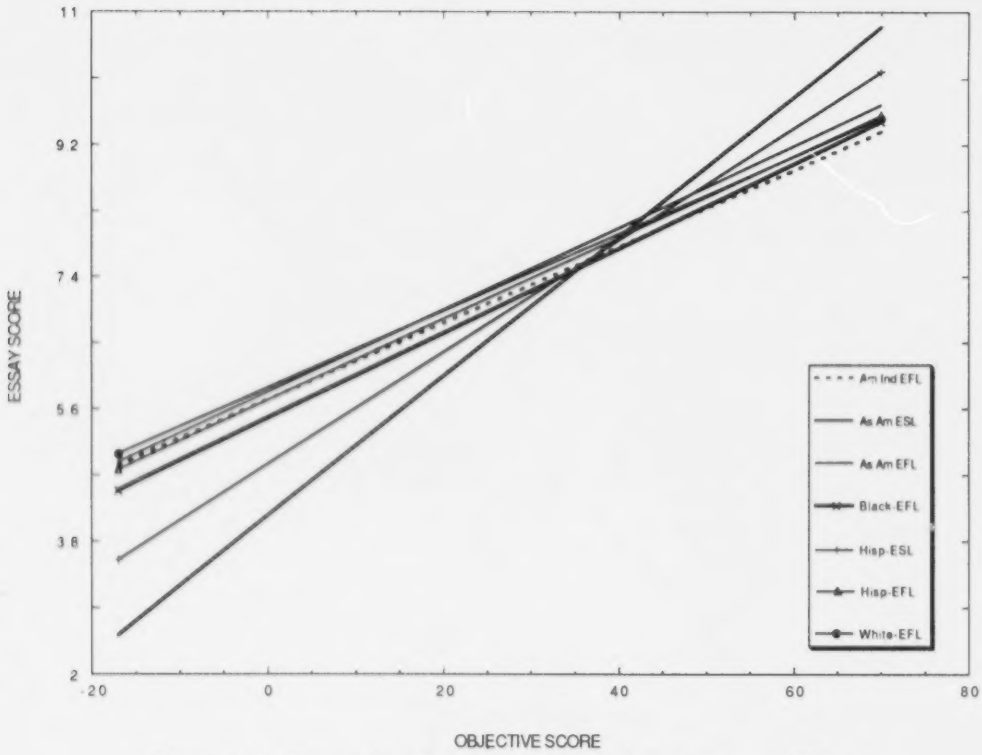

Figure A-1A. Regression of essay on objective by group: year 1989.

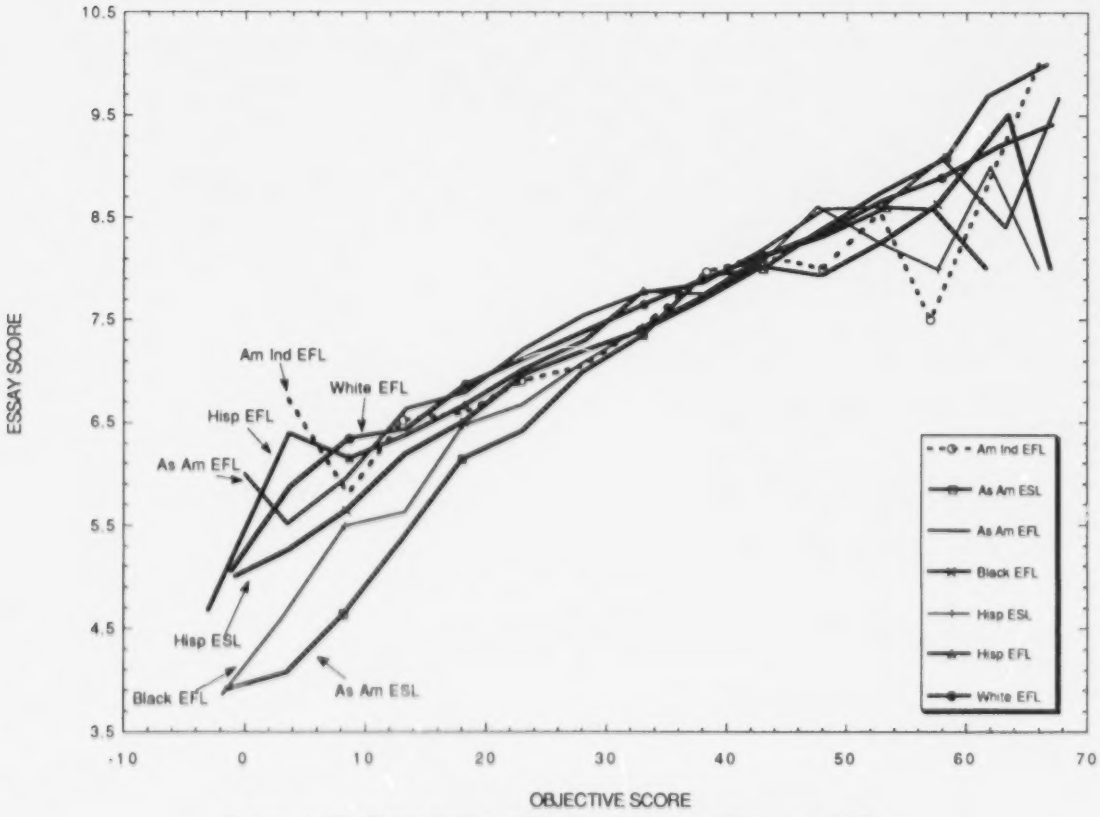

Figure A-1B. Essay versus objective means by group: year 1989.

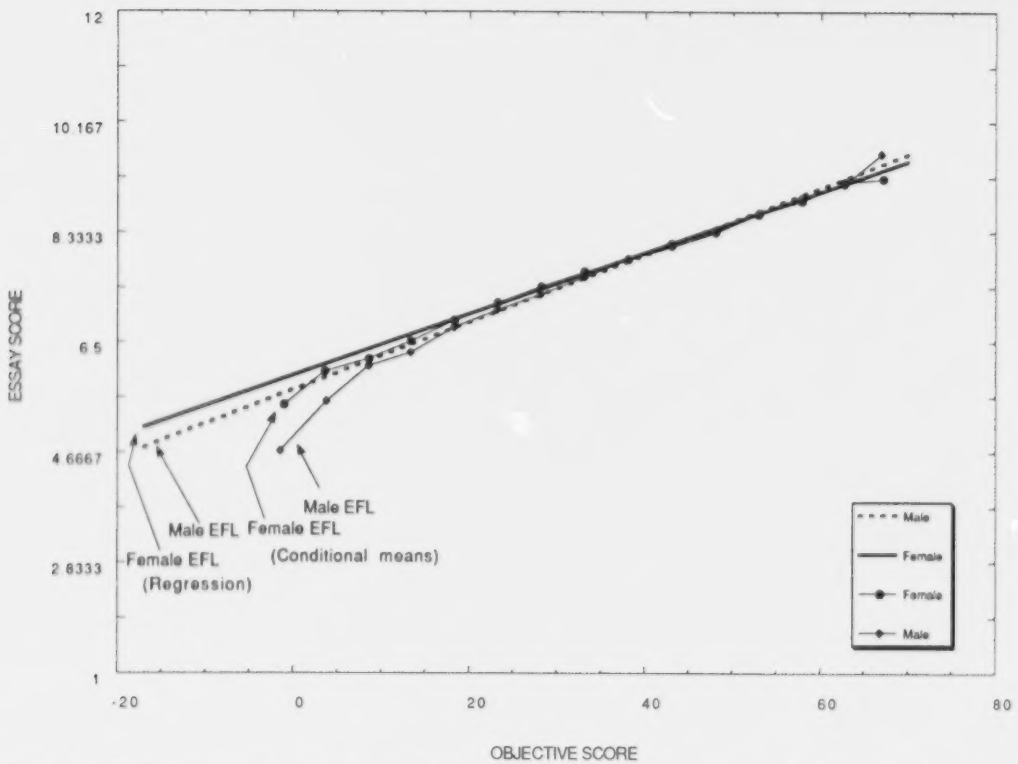

Figure A-1C. Essay versus objective means by sex: year 1989; regression of essay on objective by sex: year 1989.

Table A-2A. Summary Statistics by Group: Year 1988

	ECT Obj			*ECT Essay*			*ECT Score*			*SAT-V*			*TSWE*		
Group	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
Female EFL	31860	35.01	12.59	31860	7.63	1.68	31860	536.75	91.31	31860	524.43	93.75	31860	51.87	7.04
Male EFL	26587	33.72	12.94	26586	7.30	1.77	26587	522.44	94.92	26587	543.24	92.05	26587	51.04	7.50
Am Ind EFL	478	27.78	11.76	478	7.21	1.72	478	483.63	86.81	478	485.75	93.42	478	47.92	8.45
As Am ESL	3312	24.18	13.38	3312	6.38	2.15	3312	450.65	104.57	3312	442.78	131.25	3312	41.83	11.16
As Am EFL	2278	32.16	13.20	2278	7.52	1.82	2278	518.29	97.10	2278	530.01	99.47	2278	49.52	8.33
Black EFL	2953	27.77	12.53	2953	6.91	1.82	2953	480.72	91.47	2953	478.20	100.25	2953	47.01	8.92
Hisp ESL	1072	22.77	12.58	1072	6.31	1.94	1072	441.07	96.05	1072	429.20	108.00	1072	42.60	10.27
Hisp EFL	1225	29.50	13.29	1225	7.14	1.76	1225	495.45	95.33	1225	499.92	100.36	1225	48.40	8.72
White EFL	50563	35.09	12.58	50562	7.52	1.71	50563	534.84	91.89	50563	537.28	91.14	50563	51.95	6.90

TABLE A-2B. Intercorrelations by Group: Year 1988

		ECT Objective	*ECT Essay*	*ECT Composite*	*SAT-V*	*TSWE*
ECT	F EFL	1.00	.38	.93	.76	.77
Objective	M EFL		.41	.93	.74	.76
	AI EFL		.41	.93	.69	.76
	AA EFL		.42	.93	.76	.78
	AA ESL		.55	.94	.79	.82
ECT						
Essay	B EFL	.39	1.00	.68	.38	.34
	H EFL	.40		.70	.39	.36
	H ESL	.52		.72	.36	.35
	W EFL	.38		.71	.40	.36
				.80	.56	.56
ECT						
Composite		.93	.71	1.00	.74	.73
		.94	.69		.73	.72
		.94	.78		.68	.72
		.93	.69		.74	.74
					.79	.82
SAT-V		.75	.40	.73	1.00	.68
		.76	.38	.74		.65
		.77	.51	.76		.65
		.73	.36	.71		.71
						.79
TSWE		.78	.38	.75	.69	1.00
		.78	.38	.75	.72	
		.81	.55	.81	.76	
		.75	.34	.72	.64	

Values above the main diagonal are Female EFL, Male EFL, American Indian EFL, Asian American EFL, and Asian American ESL.
Values below the main diagonal are Black EFL, Hispanic EFL, Hispanic ESL, and White EFL.

Table A-2C. Summary Statistics by Objective Score Interval: Year 1988

Obj Score	Am Ind EFL			As Am ESL			As Am EFL			Black EFL			Hisp ESL			Hisp EFL			White EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																					
66–70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	10.00	1.41	95	9.04	1.78
61–65	.	.	.	11	8.27	1.10	24	9.63	1.53	6	8.50	2.43	.	.	.	6	7.83	1.60	647	9.07	1.59
56–60	3	8.67	0.58	21	8.67	2.48	53	9.02	1.34	28	8.57	1.53	9	8.33	2.50	20	8.90	1.74	1749	8.70	1.64
51–55	9	7.89	1.54	79	8.63	1.74	116	8.58	1.50	78	8.13	1.85	16	7.88	1.15	56	8.27	1.79	3428	8.41	1.62
46–50	21	8.62	1.75	107	8.13	1.79	175	8.38	1.71	137	8.20	1.59	29	8.34	1.52	76	7.72	1.79	5062	8.16	1.59
41–45	34	7.74	1.52	195	7.72	1.83	264	8.06	1.78	258	7.69	1.59	50	7.96	1.48	106	7.70	1.79	6299	7.93	1.58
36–40	61	8.39	1.58	285	7.79	1.63	302	7.99	1.59	288	7.29	1.83	77	7.35	1.71	122	7.80	1.55	7151	7.68	1.54
31–35	74	7.57	1.45	333	7.23	1.81	315	7.51	1.69	395	7.30	1.57	94	7.09	1.67	169	7.48	1.46	7358	7.47	1.56
26–30	67	7.04	1.81	415	6.94	1.76	296	7.42	1.55	412	7.01	1.66	126	7.12	1.56	160	7.12	1.66	6773	7.20	1.56
21–25	65	6.63	1.40	439	6.52	1.80	256	7.09	1.63	466	6.77	1.67	157	6.42	1.57	178	7.01	1.54	5296	6.91	1.59
16–20	62	6.74	1.64	463	5.90	1.86	221	6.60	1.56	373	6.37	1.69	163	6.13	1.62	137	6.31	1.63	3556	6.68	1.59
11–15	52	6.40	1.38	411	5.30	1.87	133	6.41	1.90	269	6.05	1.75	163	5.53	1.75	104	6.36	1.40	1981	6.31	1.59
6–10	22	5.95	1.53	302	4.82	1.83	88	6.15	1.75	158	5.61	1.75	124	4.97	1.78	61	6.05	1.69	870	5.92	1.70
1–5	6	6.17	2.23	202	4.36	1.70	24	6.13	1.70	65	5.40	1.61	51	4.47	1.71	21	5.19	1.47	268	5.66	1.66
−17–0	2	5.50	2.12	49	3.69	1.61	11	4.27	2.05	20	4.85	1.76	13	3.54	1.27	7	4.71	1.70	29	4.90	1.65
Objective Scores																					
66–70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	66.00	0.00	95	66.74	1.09
61–65	.	.	.	11	62.27	1.01	24	62.96	1.63	6	63.17	1.47	.	.	.	6	62.50	1.22	647	62.70	1.48
56–60	3	57.67	1.53	21	58.24	1.64	53	57.55	1.46	28	57.79	1.26	9	58.00	1.58	20	57.50	1.40	1749	57.93	1.44
51–55	9	52.67	2.00	79	52.54	1.41	116	53.10	1.42	78	52.81	1.41	16	52.69	1.54	56	52.95	1.54	3428	53.02	1.46
46–50	21	48.00	1.52	107	48.01	1.46	175	48.12	1.43	137	48.09	1.44	29	48.14	1.36	76	48.20	1.41	5062	48.09	1.43
41–45	34	42.59	1.46	195	43.02	1.40	264	43.11	1.34	258	43.04	1.43	50	43.02	1.49	106	43.15	1.39	6299	43.09	1.43
36–40	61	38.15	1.28	285	38.13	1.38	302	37.99	1.45	288	37.96	1.44	77	37.97	1.50	122	38.20	1.42	7151	38.10	1.42
31–35	74	33.11	1.57	333	33.08	1.42	315	33.05	1.44	395	33.10	1.40	94	32.98	1.44	169	32.93	1.44	7358	33.13	1.42
26–30	67	28.31	1.27	415	28.06	1.44	296	28.14	1.45	412	28.09	1.45	126	28.19	1.35	160	28.14	1.42	6773	28.16	1.42
21–25	65	22.83	1.42	439	23.06	1.44	256	23.07	1.43	466	23.17	1.42	157	23.31	1.36	178	23.11	1.47	5296	23.17	1.42
16–20	62	18.27	1.33	463	18.06	1.46	221	18.39	1.40	373	18.18	1.38	163	18.02	1.50	137	17.94	1.53	3556	18.29	1.39
11–15	52	13.29	1.54	411	13.10	1.39	133	13.20	1.50	269	13.25	1.38	163	13.20	1.47	104	13.42	1.36	1982	13.34	1.41
6–10	22	8.05	1.59	302	8.28	1.42	88	8.42	1.33	158	8.25	1.44	124	8.14	1.40	61	8.48	1.37	870	8.41	1.38
1–5	6	3.82	.75	202	3.39	1.35	24	3.29	1.40	65	3.35	1.43	51	3.65	1.20	21	3.67	1.11	268	3.62	1.25
−17–0	2	−3.00	4.24	49	−1.55	1.40	11	−1.09	2.07	20	−2.10	2.10	13	−1.38	1.61	7	−1.57	1.40	29	−1.69	1.98

Table A-2D. Regression of ECT Essay on Objective Score by Group: Year 1988

Group	N	Correlation	Slope	Intercept
Female EFL	31860	.38	.050	5.875
Male EFL	26587	.41	.056	5.422
Am Ind EFL	478	.41	.059	5.558
As Am ESL	3312	.55	.088	4.256
As Am EFL	2278	.42	.058	5.669
Black EFL	2953	.39	.057	5.337
Hisp ESL	1072	.52	.081	4.473
Hisp EFL	1225	.40	.052	5.596
White EFL	50563	.39	.052	5.685

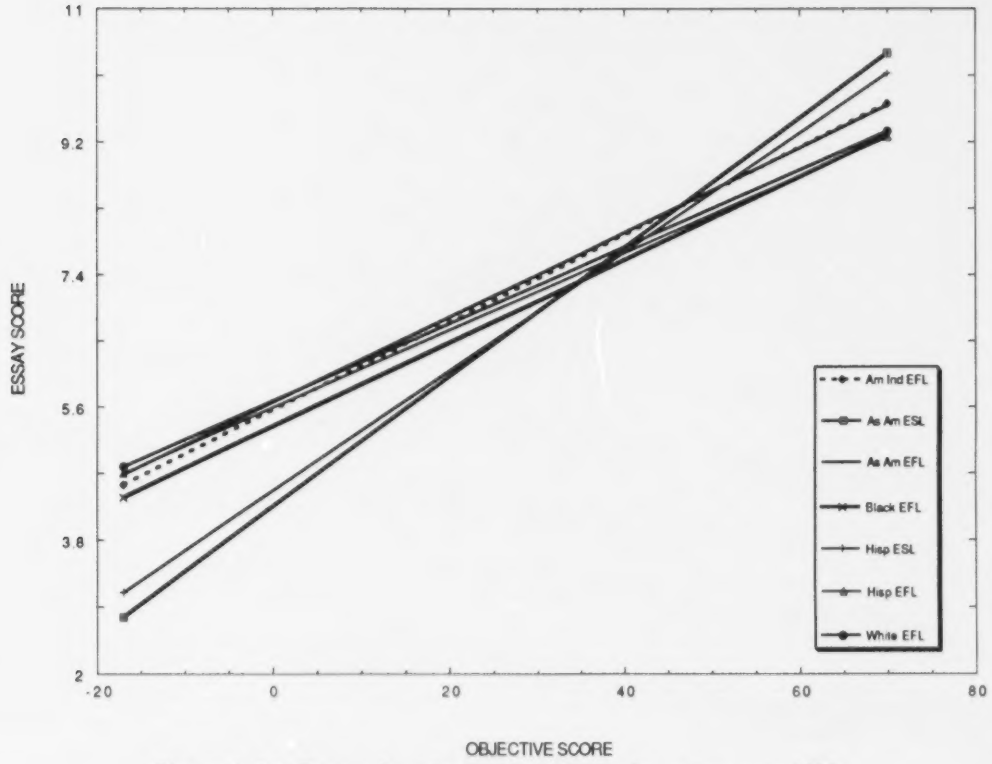

Figure A-2A. Regression of essay on objective by group: year 1988.

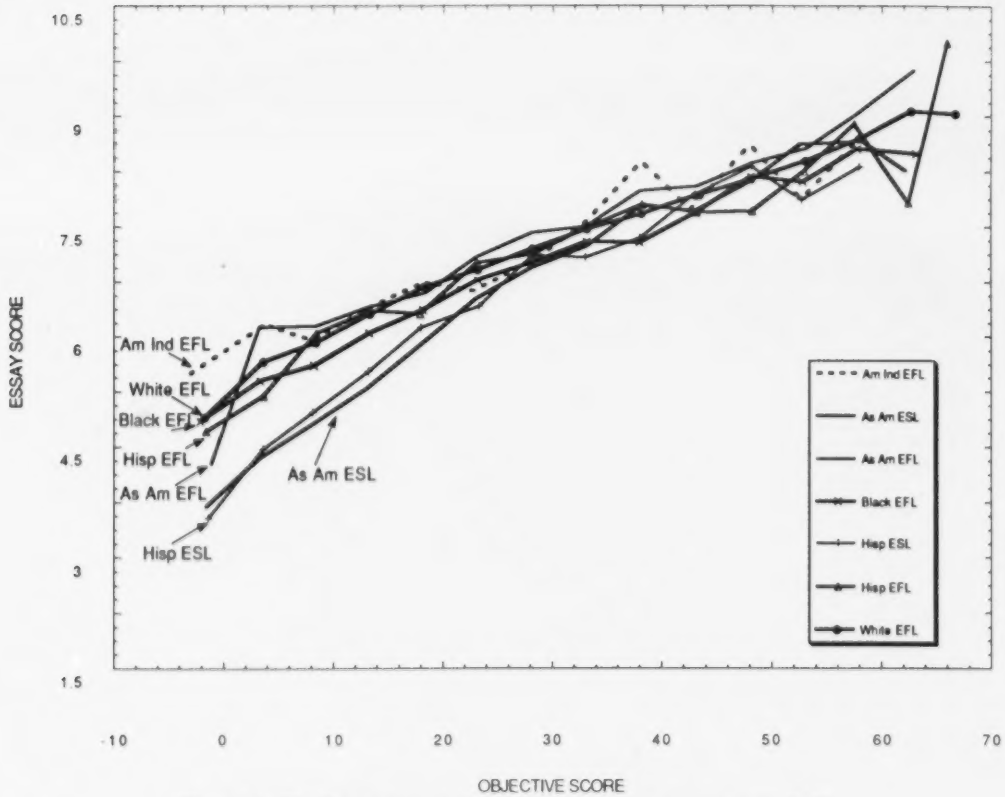

Figure A-2B. Essay versus objective means by group: year 1988.

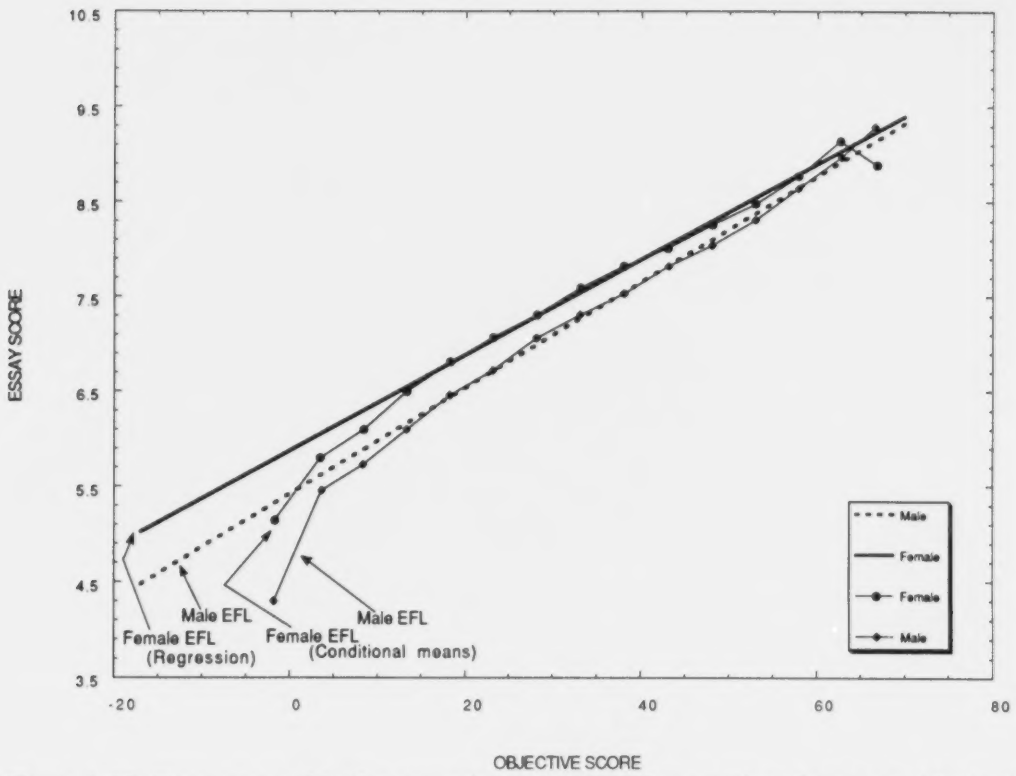

Figure A-2C. Essay versus objective means by sex: year 1988; regression of essay on objective by sex: year 1988.

Table A-3A. Summary Statistics by Group: Year 1987

	ECT Obj			*ECT Essay*			*ECT Score*			*SAT-V*			*TSWE*		
Group	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
Female EFL	37785	34.97	12.21	37761	7.82	1.71	37785	530.38	92.14	37785	522.98	92.17	37785	52.37	6.95
Male EFL	32094	33.78	12.51	32075	7.64	1.81	32094	519.82	95.13	32094	539.51	91.30	32094	51.50	7.28
Am Ind EFL	428	29.41	12.13	427	7.43	1.74	428	489.95	91.97	428	494.16	92.39	428	49.18	7.67
As Am ESL	3702	24.30	12.47	3692	6.36	2.28	3702	439.69	105.07	3702	439.48	124.89	3702	42.14	11.07
As Am EFL	2645	32.37	12.67	2645	7.73	1.86	2645	513.69	98.07	2645	529.27	100.34	2645	50.43	7.92
Black EFL	3566	27.44	12.23	3562	7.12	1.86	3566	472.29	93.75	3566	474.98	97.59	3566	47.28	9.05
Hisp ESL	1313	22.69	12.00	1306	6.45	2.11	1313	431.36	98.57	1313	428.23	102.82	1313	43.43	10.31
Hisp EFL	1218	30.33	12.63	1217	7.47	1.82	1218	496.08	96.12	1218	503.76	96.38	1218	49.65	8.03
White EFL	62022	35.03	12.20	61985	7.78	1.74	62022	529.92	92.29	62022	534.60	90.17	62022	52.37	6.81

TABLE A-3B. Intercorrelations by Group: Year 1987

		ECT Objective	*ECT Essay*	*ECT Composite*	*SAT-V*	*TSWE*
ECT	F EFL	1.00	.41	.94	.77	.77
Objective	M EFL		.42	.93	.76	.76
	AI EFL		.43	.94	.75	.76
	AA EFL		.47	.94	.77	.78
	AA ESL		.59	.94	.80	.83
ECT						
Essay	B EFL	.45	1.00	.70	.41	.38
	H EFL	.44		.71	.42	.39
	H ESL	.56		.71	.42	.45
	W EFL	.40		.74	.46	.44
				.83	.62	.63
ECT						
Composite		.93	.73	1.00	.76	.74
		.94	.72		.75	.74
		.93	.81		.74	.75
		.93	.70		.76	.76
					.81	.83
SAT-V		.77	.43	.75	1.00	.69
		.76	.42	.74		.67
		.78	.57	.78		.70
		.75	.40	.74		.70
						.80
TSWE		.80	.44	.78	.72	1.00
		.78	.40	.76	.70	
		.80	.60	.81	.77	
		.76	.37	.73	.66	

Values above the main diagonal are Female EFL, Male EFL, American Indian EFL, Asian American EFL, and Asian American ESL.
Values below the main diagonal are Black EFL, Hispanic EFL, Hispanic ESL, and White EFL.

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Table A-3C. Summary Statistics by Objective Score Interval: Year 1987

Obj Score	Am Ind EFL			As Am ESL			As Am EFL			Black EFL			Hisp ESL			Hisp EFL			White EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																					
66–70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	43	9.62	1.81
61–65	1	11.00	.	4	10.25	1.71	25	10.12	1.48	10	9.60	1.43	.	.	.	5	8.00	1.73	668	9.48	1.56
56–60	9	9.22	2.17	30	9.18	1.53	53	9.53	1.65	41	9.27	1.66	6	9.67	0.82	18	9.11	1.32	2134	9.05	1.61
51–55	14	8.71	1.64	58	8.56	1.78	144	8.87	1.74	85	8.86	1.65	15	8.60	1.76	44	8.98	1.78	3992	8.76	1.62
46–50	18	8.69	1.27	127	8.50	1.83	212	8.69	1.57	161	8.30	1.60	33	8.79	1.60	89	8.65	1.62	5908	8.53	1.59
41–45	36	7.97	1.54	206	8.28	1.63	271	8.42	1.73	240	7.95	1.62	64	8.30	1.56	128	8.33	1.55	7693	8.22	1.59
36–40	50	8.15	1.44	293	7.94	1.76	330	8.20	1.63	357	7.68	1.64	77	8.08	1.65	138	7.82	1.62	9223	7.96	1.60
31–35	60	7.80	1.63	386	7.48	1.72	422	7.95	1.54	445	7.64	1.65	134	7.47	1.63	161	7.66	1.71	9406	7.70	1.58
26–30	70	7.11	1.40	481	6.89	1.87	382	7.45	1.55	546	7.27	1.57	164	7.16	1.85	169	7.35	1.66	8393	7.41	1.57
21–25	65	7.14	1.70	546	6.46	1.89	308	7.16	1.76	591	6.89	1.70	212	6.36	1.78	176	7.05	1.63	6728	7.13	1.62
16–20	44	6.86	1.75	560	5.66	1.98	233	6.83	1.66	486	6.69	1.68	190	6.03	1.76	141	6.78	1.59	4382	6.81	1.61
11–15	43	6.47	1.54	508	5.10	1.90	163	6.20	1.71	314	6.04	1.76	208	5.69	1.78	82	6.41	1.70	2304	6.48	1.64
6–10	12	5.67	1.61	330	4.47	1.89	77	6.01	1.77	200	5.56	1.78	130	4.80	1.83	43	5.77	1.69	890	6.19	1.67
1–5	4	5.25	2.06	133	3.70	1.51	21	4.86	2.08	70	4.99	1.54	57	4.32	1.87	21	5.52	1.47	195	5.85	1.66
−17–0	1	7.00	.	30	3.30	1.51	4	5.25	2.50	16	5.13	2.28	16	4.13	1.63	2	5.00	1.41	26	5.12	1.66
Objective Scores																					
66–70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	43	67.16	0.65
61–65	1	65.00	.	4	62.50	1.29	25	62.44	0.96	10	63.20	0.92	.	.	.	5	62.80	0.84	668	62.81	1.13
56–60	9	58.00	1.22	30	57.67	1.03	53	58.08	1.12	41	58.10	1.26	6	57.50	1.05	18	58.50	1.25	2134	58.04	1.19
51–55	14	52.79	1.19	58	52.69	1.08	144	53.21	1.30	85	53.05	1.30	15	53.00	1.41	44	52.95	1.20	3994	53.08	1.27
46–50	18	47.83	1.42	127	47.93	1.26	212	48.04	1.33	161	48.01	1.35	33	48.00	1.30	89	47.88	1.32	5910	48.10	1.30
41–45	36	43.22	1.27	206	42.90	1.37	271	43.01	1.34	240	43.00	1.28	64	42.94	1.26	128	43.27	1.33	7697	43.11	1.32
36–40	50	37.74	1.21	293	38.09	1.40	330	38.10	1.32	357	37.89	1.31	77	38.12	1.37	138	37.88	1.42	9225	38.09	1.33
31–35	60	33.33	1.13	387	32.95	1.32	422	33.07	1.35	446	33.01	1.38	134	32.95	1.32	161	32.83	1.36	9414	33.15	1.35
26–30	70	27.93	1.11	481	28.03	1.34	382	28.04	1.35	546	28.11	1.33	165	28.07	1.34	169	28.00	1.37	8396	28.15	1.35
21–25	65	22.95	1.46	547	23.05	1.40	308	23.13	1.36	593	23.15	1.37	213	22.83	1.37	177	23.22	1.42	6734	23.23	1.36
16–20	45	18.42	1.36	562	17.98	1.40	233	18.22	1.32	486	18.27	1.32	192	17.96	1.42	141	18.18	1.40	4386	18.29	1.36
11–15	43	13.16	1.43	508	13.17	1.39	163	13.19	1.42	314	13.35	1.39	209	13.13	1.38	82	13.37	1.34	2309	13.42	1.34
6–10	12	8.42	1.24	333	8.32	1.34	77	8.43	1.25	200	8.33	1.27	132	8.36	1.35	43	8.30	1.50	891	8.51	1.30
1–5	4	3.50	0.58	136	3.61	1.24	21	3.71	0.96	70	3.59	1.22	57	3.56	1.25	21	3.67	1.28	195	3.82	1.11
−17–0	1	0.00	.	30	−1.63	1.43	4	−1.50	1.29	17	−1.12	1.41	16	−1.81	2.34	2	-0.50	0.71	26	−0.73	1.08

Table A-3D. Summary Statistics by Objective Score Interval by Sex: Years 1987, 1986, 1985

Obj Score	1987 Data						1986 Data						1985 Data					
	Female EFL			Male EFL			Female EFL			Male EFL			Female EFL			Male EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																		
66–70	22	9.57	1.80	21	9.67	1.85	58	9.95	1.30	56	9.61	1.83	7	9.57	2.70	6	10.00	2.28
61–65	415	9.56	1.52	294	9.39	1.63	527	9.46	1.43	382	9.16	1.59	67	9.82	1.34	41	10.63	1.07
56–60	1266	9.11	1.60	989	9.01	1.63	1360	9.05	1.49	1025	9.05	1.60	163	9.62	1.45	111	9.60	1.63
51–55	2392	8.80	1.58	1887	8.73	1.67	2423	8.76	1.49	1848	8.62	1.63	304	9.39	1.46	222	9.17	1.41
46–50	3628	8.54	1.57	2760	8.52	1.61	3401	8.48	1.50	2618	8.42	1.54	428	9.10	1.58	319	9.03	1.65
41–45	4755	8.24	1.56	3613	8.19	1.65	4213	8.24	1.51	3335	8.09	1.63	577	8.73	1.52	404	8.75	1.61
36–40	5595	8.01	1.58	4503	7.89	1.63	4818	7.92	1.52	3866	7.83	1.60	627	8.41	1.57	526	8.50	1.62
31–35	5704	7.75	1.53	4790	7.65	1.64	5018	7.70	1.53	4169	7.59	1.60	616	8.29	1.47	540	8.21	1.63
26–30	5066	7.45	1.54	4494	7.34	1.61	4587	7.43	1.48	3830	7.27	1.59	566	7.93	1.45	554	7.95	1.59
21–25	4147	7.16	1.60	3721	7.06	1.66	3611	7.12	1.52	3383	6.97	1.60	482	7.78	1.45	432	7.51	1.63
16–20	2634	6.94	1.54	2652	6.66	1.68	2564	6.82	1.54	2380	6.56	1.64	297	7.52	1.54	298	7.38	1.63
11–15	1414	6.47	1.59	1492	6.36	1.73	1285	6.43	1.58	1331	6.27	1.68	173	7.29	1.35	211	7.10	1.61
6–10	572	6.15	1.66	650	5.97	1.75	461	5.82	1.65	484	5.74	1.66	58	6.60	1.53	88	6.40	1.75
1–5	134	5.66	1.72	177	5.49	1.68	103	6.01	1.91	132	5.63	1.85	28	6.25	1.53	27	6.48	1.67
−17–0	17	5.18	2.13	32	5.16	1.78	88	1.26	2.50	77	1.22	2.15	19	1.68	2.71	22	1.18	2.61
Objective Scores																		
66–70	22	67.32	0.65	21	67.00	0.63	58	67.16	1.24	56	66.86	1.17	7	67.43	1.13	6	67.17	1.33
61–65	415	62.80	1.11	294	62.81	1.15	527	62.76	1.44	382	62.63	1.47	67	62.46	1.46	41	62.98	1.51
56–60	1266	58.06	1.19	989	58.03	1.19	1360	57.97	1.45	1025	57.94	1.43	163	57.67	1.39	111	57.86	1.46
51–55	2394	53.06	1.27	1887	53.12	1.26	2423	52.98	1.44	1848	53.06	1.48	304	53.09	1.43	222	53.10	1.42
46–50	3630	48.06	1.31	2760	48.14	1.30	3401	48.06	1.43	2618	48.05	1.46	428	48.14	1.42	319	48.17	1.52
41–45	4755	43.10	1.33	3617	43.12	1.32	4213	43.04	1.45	3335	43.05	1.44	577	43.00	1.48	404	42.99	1.48
36–40	5595	38.09	1.33	4505	38.07	1.33	4818	38.09	1.43	4866	38.07	1.42	627	38.06	1.42	526	38.08	1.44
31–35	5710	33.13	1.35	4793	33.14	1.36	5018	33.12	1.42	4169	33.07	1.43	616	33.07	1.44	540	33.10	1.39
26–30	5067	28.14	1.34	4496	28.13	1.35	4587	28.13	1.42	4024	28.13	1.42	566	28.31	1.40	554	28.08	1.45
21–25	4153	23.21	1.36	3724	23.23	1.37	3611	23.22	1.40	3383	23.13	1.41	482	23.26	1.38	432	23.25	1.45
16–20	2638	18.29	1.35	2653	18.27	1.36	2564	18.23	1.42	2380	18.22	1.40	297	18.42	1.36	298	18.27	1.41
11–15	1415	13.40	1.35	1496	13.39	1.35	1285	13.36	1.37	1331	13.35	1.38	173	13.39	1.37	211	13.29	1.36
6–10	573	8.51	1.31	650	8.43	1.30	461	8.66	1.26	484	8.56	1.36	58	8.91	1.20	88	8.61	1.42
1–5	134	3.69	1.06	177	3.79	1.19	103	3.85	1.27	132	3.82	1.11	28	3.79	1.37	27	3.70	1.20
−17–0	18	−0.89	1.28	32	−0.91	1.17	88	−0.16	0.43	77	−0.22	0.84	19	−0.37	0.68	22	−0.27	0.70

Table A-3E. Regression of ECT Essay on Objective Score by Group: Year 1987

Group	N	Correlation	Slope	Intercept
Female EFL	37761	.41	.057	5.825
Male EFL	32075	.42	.060	5.596
Am Ind EFL	427	.43	.061	5.625
As Am ESL	3692	.59	.108	3.726
As Am EFL	2645	.47	.069	5.502
Black EFL	3562	.45	.068	5.253
Hisp ESL	1306	.56	.098	4.229
Hisp EFL	1217	.44	.064	5.534
White EFL	61985	.40	.057	5.775

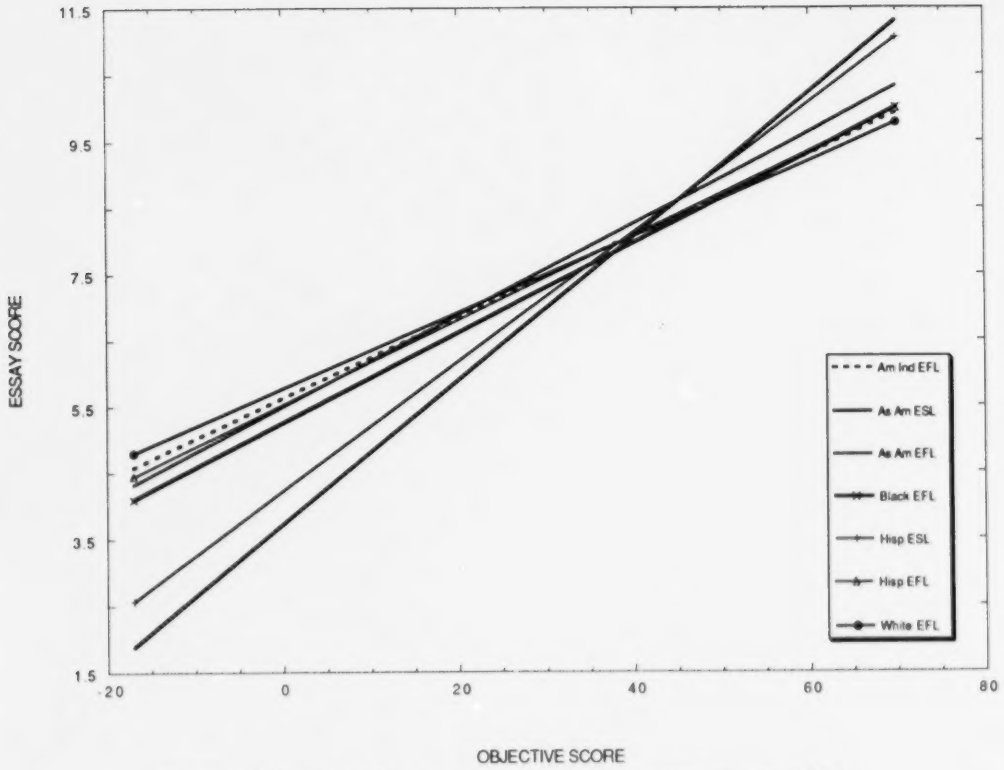

Figure A-3A. Regression of essay on objective by group: year 1987.

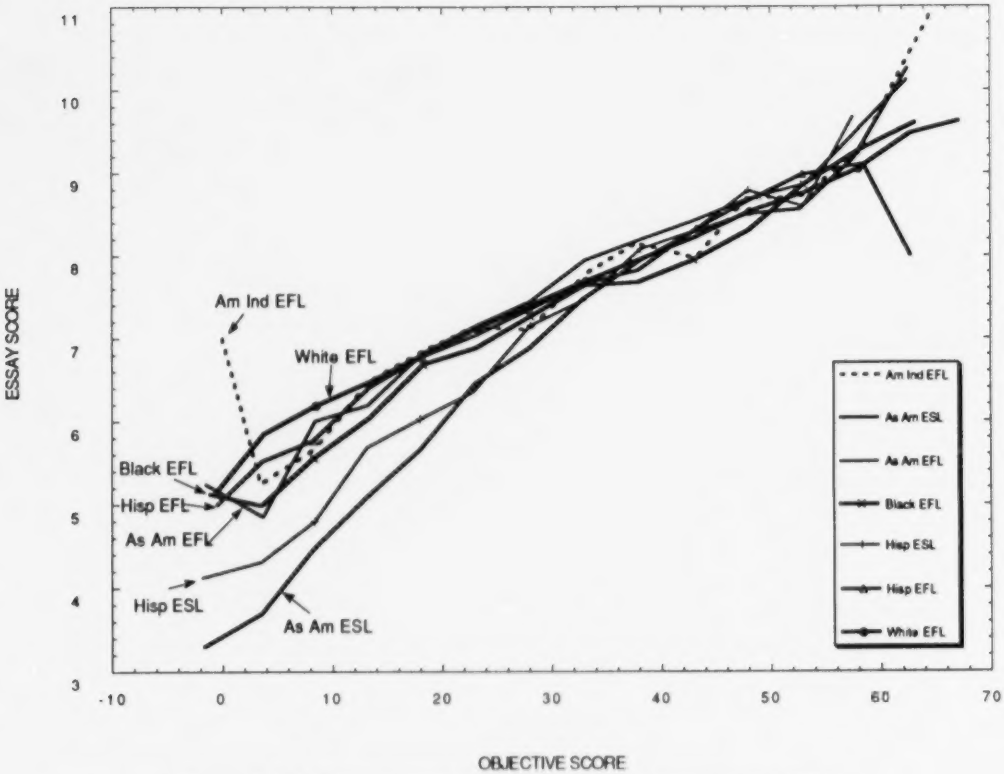

Figure A-3B. Essay versus objective means by group: year 1987.

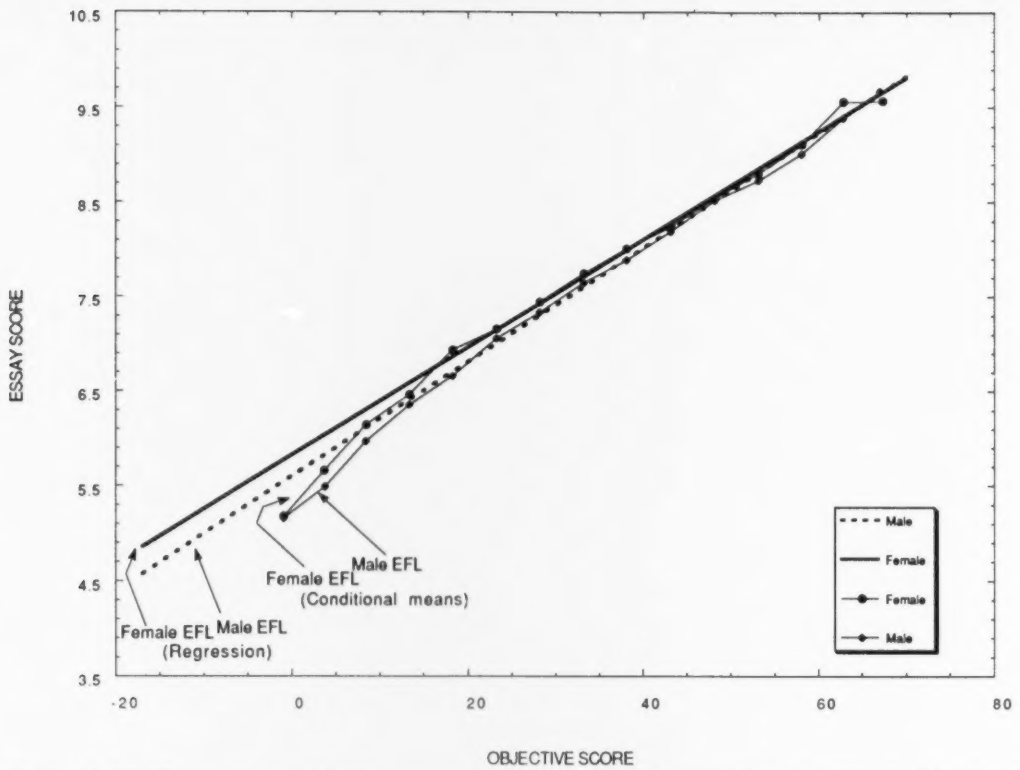

Figure A-3C. Essay versus objective means by sex: year 1987; regression of essay on objective by sex: year 1987.

Table A-4A. Summary Statistics by Group: Year 1986

	ECT Obj			*ECT Essay*			*ECT Score*			*SAT-V*			*TSWE*		
Group	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
Female EFL	34517	35.34	12.64	34517	7.78	1.71	34517	534.48	92.82	34517	528.04	91.96	34517	52.43	6.97
Male EFL	28916	34.28	12.83	28916	7.58	1.81	28916	524.30	95.42	28916	541.57	92.35	28916	51.55	7.48
Am Ind EFL	335	29.19	12.22	335	7.24	1.86	335	487.85	93.02	335	494.78	91.68	335	48.80	8.36
As Am ESL	2755	25.16	13.38	2755	6.15	2.42	2755	443.91	111.20	2755	442.25	131.55	2755	41.84	11.42
As Am EFL	2070	32.48	12.95	2070	7.65	1.84	2070	515.26	97.78	2070	530.47	102.36	2070	50.28	8.36
Black EFL	2575	27.62	12.45	2575	7.06	1.95	2575	476.54	93.94	2575	481.27	97.92	2575	47.32	9.14
Hisp ESL	786	24.38	12.27	786	6.50	2.16	786	445.87	100.24	786	440.65	102.80	786	43.74	10.13
Hisp EFL	987	30.40	13.23	987	7.36	1.93	987	498.54	100.44	987	504.38	99.86	987	49.03	8.69
White EFL	56568	35.38	12.59	56568	7.72	1.74	56568	533.53	92.86	56568	537.31	90.51	56568	52.39	6.93

TABLE A-4B. Intercorrelations by Group: Year 1986

	ECT Objective	*ECT Essay*	*ECT Composite*	*SAT-V*	*TSWE*
ECT	1.00	.44	.94	.78	.76
Objective		.45	.94	.76	.75
		.42	.93	.77	.74
		.47	.94	.78	.78
		.62	.94	.79	.82
ECT					
Essay	.49	1.00	.71	.46	.41
	.55		.72	.45	.41
	.57		.72	.44	.36
	.43		.74	.48	.44
			.83	.67	.66
ECT					
Composite	.93	.73	1.00	.77	.74
	.95	.76		.76	.74
	.93	.80		.76	.71
	.94	.71		.77	.77
				.83	.84
SAT-V	.76	.46	.75	1.00	.68
	.79	.53	.79		.67
	.79	.58	.80		.66
	.76	.44	.75		.71
					.80
TSWE	.79	.46	.77	.72	1.00
	.78	.50	.78	.73	
	.81	.58	.81	.76	
	.75	.40	.73	.66	

Values above the main diagonal are Female EFL, Male EFL, American Indian EFL, Asian American EFL, and Asian American ESL.
Values below the main diagonal are Black EFL, Hispanic EFL, Hispanic ESL, and White EFL.

Table A-4C. Summary Statistics by Objective Score Interval: Year 1986

Obj Score	Am Ind EFL			As Am ESL			As Am EFL			Black EFL			Hisp ESL			Hisp EFL			White EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																					
66–70	.	.	.	1	10.00	.	2	11.00	1.41	1	8.00	.	.	.	.	.	.	.	108	9.77	1.60
61–65	4	10.25	.96	14	9.79	1.58	13	9.69	1.44	5	8.60	1.52	1	5.00	.	11	9.73	1.19	860	9.32	1.51
56–60	5	8.80	2.28	30	8.73	1.53	58	8.93	1.63	29	9.00	1.58	5	9.80	.45	22	9.50	1.65	2222	9.05	1.54
51–55	11	8.91	1.45	61	8.41	1.77	109	8.76	1.64	63	8.71	1.52	11	9.09	2.12	35	8.71	1.32	3997	8.70	1.56
46–50	13	8.46	.78	113	8.06	1.84	181	8.75	1.47	132	8.38	1.57	25	8.28	1.54	62	8.58	1.49	5532	8.44	1.52
41–45	24	7.50	1.29	156	7.87	1.86	221	8.43	1.58	194	7.96	1.78	46	8.26	1.64	93	8.44	1.46	6907	8.17	1.56
36–40	38	8.11	1.61	238	7.80	1.75	250	8.03	1.57	250	7.80	1.60	70	7.67	1.66	126	8.05	1.47	7900	7.88	1.56
31–35	51	7.53	1.67	313	7.19	1.88	309	7.82	1.66	334	7.49	1.58	80	7.78	1.65	121	7.81	1.52	8252	7.65	1.56
26–30	48	7.15	1.84	345	6.79	2.00	270	7.38	1.52	381	7.24	1.61	100	6.96	1.59	143	7.12	1.53	7476	7.37	1.53
21–25	51	6.76	1.68	363	6.08	1.87	245	7.07	1.56	391	7.01	1.58	115	6.41	1.70	129	6.81	1.69	6090	7.06	1.56
16–20	46	6.70	1.52	411	5.55	2.02	204	6.76	1.65	348	6.63	1.64	126	5.87	1.84	130	6.43	1.58	4139	6.71	1.58
11–15	31	5.90	2.23	330	4.89	1.85	127	6.16	1.88	252	6.03	1.63	104	5.63	1.83	56	6.23	1.57	2115	6.42	1.60
6–10	11	6.36	2.06	234	4.05	1.67	57	5.74	1.66	126	5.39	1.81	76	4.61	2.10	32	5.50	2.13	698	5.84	1.59
1–5	2	6.00	2.83	81	3.47	1.64	18	6.06	2.44	35	5.34	1.85	18	4.56	1.62	16	5.63	2.09	161	5.89	1.74
−17–0	.	.	.	65	1.20	1.55	6	3.17	2.99	34	1.06	2.13	9	1.78	2.49	11	2.18	3.06	111	1.10	2.26
Objective Scores																					
66–70	.	.	.	1	66.00	.	2	66.00	0.00	1	66.00	.	.	.	.	.	.	.	108	67.02	1.21
61–65	4	62.25	1.50	14	62.21	1.53	13	63.38	1.66	5	61.40	0.89	1	61.00	.	11	62.73	1.01	860	62.71	1.46
56–60	5	57.80	1.79	30	57.57	1.38	58	57.69	1.52	29	57.69	1.49	5	58.40	0.89	22	58.55	1.41	2222	57.96	1.43
51–55	11	52.45	1.51	61	52.70	1.36	109	53.00	1.50	63	53.02	1.44	11	51.82	1.17	35	53.09	1.56	3997	53.01	1.45
46–50	13	48.15	1.57	113	47.97	1.63	181	48.09	1.43	132	47.81	1.40	25	47.52	1.26	62	48.24	1.38	5532	48.06	1.44
41–45	24	42.71	1.52	156	43.04	1.40	221	42.95	1.41	194	42.92	1.45	46	42.76	1.40	93	43.05	1.45	6907	43.05	1.45
36–40	38	38.66	1.32	238	37.90	1.42	250	38.12	1.44	250	37.92	1.43	70	38.01	1.39	126	38.02	1.33	7900	38.08	1.43
31–35	51	32.92	1.53	313	33.01	1.44	309	33.10	1.48	334	33.02	1.42	80	33.23	1.47	121	32.96	1.36	8252	33.11	1.43
26–30	48	28.02	1.34	345	28.02	1.38	270	28.14	1.46	381	28.16	1.43	100	27.95	1.36	143	28.10	1.44	7476	28.12	1.42
21–25	51	22.98	1.42	363	23.07	1.47	245	23.06	1.46	391	23.16	1.44	115	22.96	1.41	129	22.89	1.39	6090	23.19	1.40
16–20	46	18.30	1.49	411	17.97	1.47	204	18.10	1.36	348	18.04	1.42	126	18.12	1.42	130	18.16	1.41	4139	18.25	1.41
11–15	31	13.19	1.45	330	13.16	1.36	127	13.32	1.38	252	13.22	1.44	104	13.18	1.42	56	12.95	1.37	2115	13.40	1.36
6–10	11	8.18	1.60	234	8.26	1.41	57	8.68	1.34	126	8.40	1.29	76	8.24	1.46	32	8.81	1.33	698	8.64	1.30
1–5	2	3.50	.71	81	3.56	1.41	18	4.11	1.28	35	3.89	1.05	18	3.22	1.17	16	3.75	1.34	161	3.81	1.20
−17–0	.	.	.	65	−.86	1.81	6	−0.17	0.41	34	−0.18	0.63	9	−1.00	1.66	11	−0.18	0.40	111	−0.20	0.70

Table A-4D. Regression of ECT Essay on Objective Score by Group: Year 1986

Group	N	Correlation	Slope	Intercept
Female EFL	34517	.44	.060	5.651
Male EFL	28916	.45	.063	5.423
Am Ind EFL	335	.42	.064	5.381
As Am ESL	2755	.62	.112	3.334
As Am EFL	2070	.47	.067	5.461
Black EFL	2575	.49	.076	4.964
Hisp ESL	786	.57	.100	4.068
Hisp EFL	987	.55	.080	4.940
White EFL	56568	.43	.060	5.603

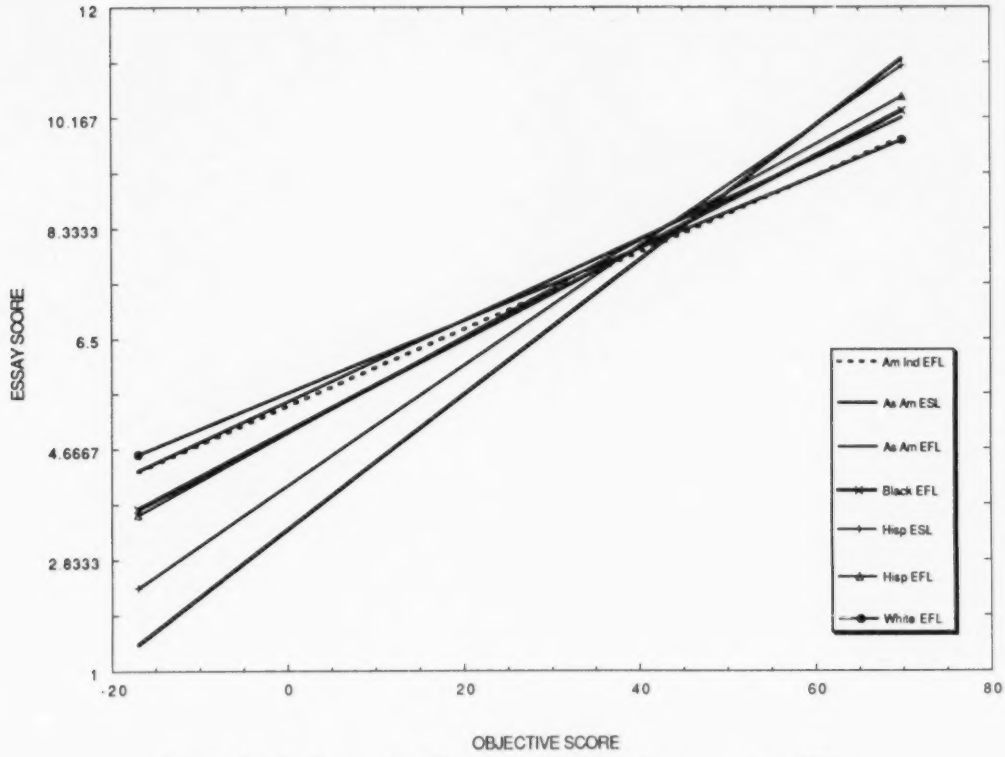

Figure A-4A. Regression of essay on objective by group: year 1986.

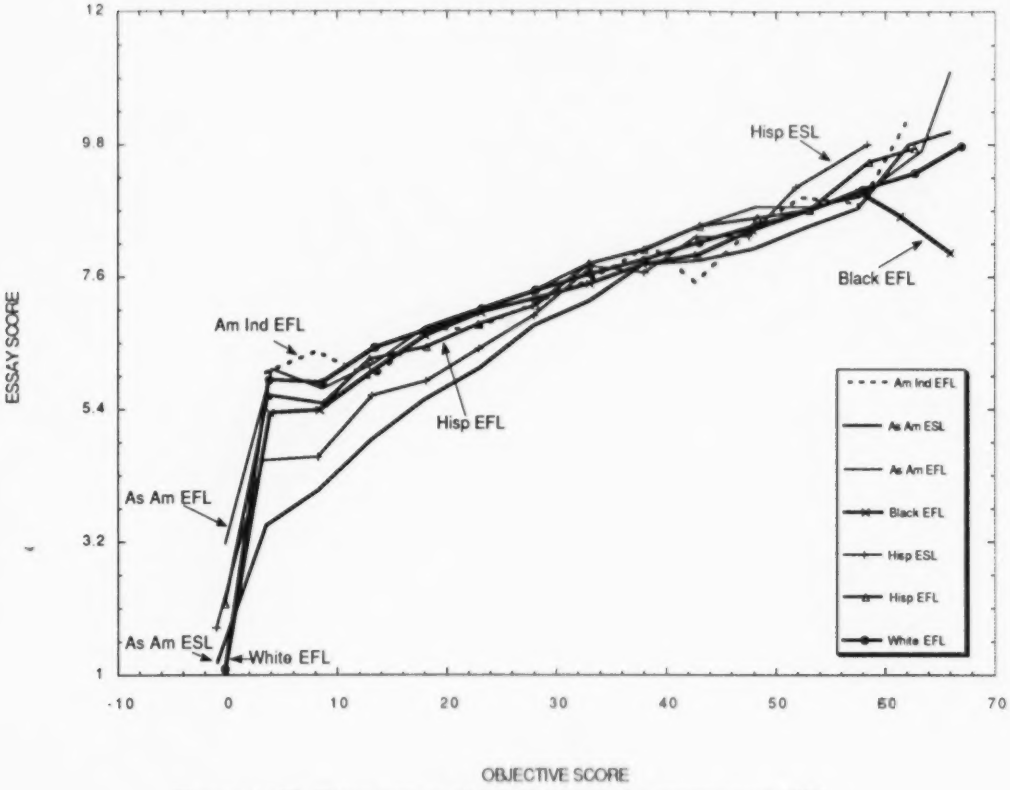

Figure A-4B. Essay versus objective means by group: year 1986.

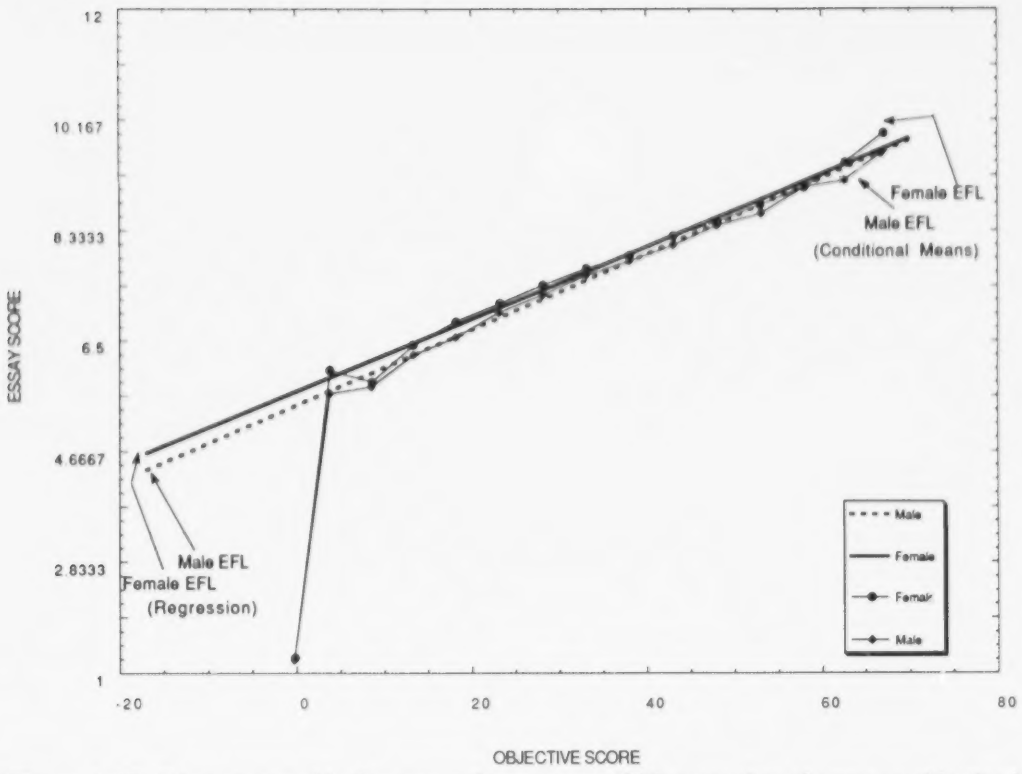

Figure A-4C. Essay versus objective means by sex: year 1986; regression of essay on objective by sex: year 1986.

Table A-5A. Summary Statistics by Group: Year 1985

	ECT Obj			*ECT Essay*			*ECT Score*			*SAT-V*			*TSWE*		
Group	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
Female EFL	4412	35.24	12.72	4412	8.34	1.70	4412	536.31	92.16	4412	528.45	93.34	4412	51.38	7.25
Male EFL	3801	33.29	12.96	3801	8.16	1.86	3801	522.04	95.07	3801	535.72	90.34	3801	50.34	7.52
Am Ind EFL	47	28.15	11.08	47	7.62	2.02	47	481.28	83.00	47	477.45	79.08	47	47.13	7.02
As Am ESL	353	23.85	13.49	353	6.82	2.51	353	442.97	110.36	353	435.30	131.82	353	42.81	11.03
As Am EFL	284	33.13	13.48	284	8.40	1.85	284	525.18	99.78	284	534.12	101.99	284	50.06	8.08
Black EFL	326	27.18	13.21	326	7.58	1.92	326	476.10	95.46	326	479.39	95.43	326	46.58	9.45
Hisp ESL	117	21.16	11.68	117	6.91	2.31	117	430.00	93.68	117	415.64	97.05	117	42.20	9.95
Hisp EFL	117	29.25	13.12	117	7.72	2.13	117	492.14	93.96	117	491.37	104.55	117	47.50	8.51
White EFL	7339	34.85	12.67	7339	8.29	1.75	7339	533.31	92.35	7339	535.22	90.02	7339	51.22	7.14

TABLE A-5B. Intercorrelations by Group: Year 1985

		ECT Objective	*ECT Essay*	*ECT Composite*	*SAT-V*	*TSWE*
ECT	F EFL	1.00	.44	.94	.76	.79
Objective	M EFL		.45	.94	.74	.77
	AI EFL		.48	.93	.67	.77
	AA EFL		.45	.94	.80	.81
	AA ESL		.62	.94	.78	.82
ECT						
Essay	B EFL	.46	1.00	.69	.44	.39
	H EFL	.43		.70	.44	.41
	H ESL	.59		.75	.42	.50
	W EFL	.44		.71	.50	.44
				.83	.68	.65
ECT						
Composite		.94	.70	1.00	.76	.76
		.93	.67		.74	.74
		.93	.81		.65	.75
		.94	.69		.81	.79
					.82	.83
SAT-V		.72	.46	.73	1.00	.69
		.81	.43	.81		.68
		.73	.61	.77		.63
		.74	.42	.74		.77
						.82
TSWE		.83	.49	.81	.74	1.00
		.83	.37	.80	.76	
		.82	.63	.84	.84	
		.77	.38	.74	.66	

Values above the main diagonal are Female EFL, Male EFL, American Indian EFL, Asian American EFL, and Asian American ESL.
Values below the main diagonal are Black EFL, Hispanic EFL, Hispanic ESL, and White EFL.

Table A-5C. Summary Statistics by Objective Score Interval: Year 1985

Obj Score	Am Ind EFL			As Am ESL			As Am EFL			Black EFL			Hisp ESL			Hisp EFL			White EFL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Essay Scores																					
66–70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	10.00	.	12	9.75	2.53
61–65	.	.	.	.	.	.	4	11.25	0.96	2	8.00	2.83	.	.	.	.	.	.	101	10.13	1.25
56–60	.	.	.	4	11.00	0.82	12	9.25	1.96	5	8.20	1.30	.	.	.	2	9.00	1.41	250	9.66	1.49
51–55	.	.	.	9	8.33	1.58	15	9.80	1.66	10	9.80	1.55	1	9.00	.	5	9.20	1.92	488	9.26	1.43
46–50	3	8.33	0.58	12	9.25	1.48	22	9.55	1.47	12	8.50	1.68	2	9.00	2.83	4	9.50	1.00	699	9.06	1.62
41–45	4	7.50	2.08	22	9.00	1.51	33	8.97	1.72	19	8.89	1.49	5	9.00	1.22	11	8.55	2.11	906	8.74	1.54
36–40	4	8.50	1.29	27	8.56	1.69	38	8.55	1.84	36	7.86	1.79	6	8.83	1.17	12	8.17	1.53	1051	8.46	1.57
31–35	7	9.00	1.15	30	7.50	1.74	37	8.16	1.61	40	8.33	1.47	10	8.20	1.62	14	8.29	1.73	1044	8.25	1.55
26–30	11	8.18	1.17	45	7.73	1.91	39	8.00	1.72	49	8.06	1.63	17	7.94	1.20	20	7.40	1.64	990	7.94	1.51
21–25	9	7.11	1.83	46	7.13	2.26	26	8.12	1.34	47	7.34	1.78	17	7.47	2.18	15	7.40	2.29	806	7.67	1.52
16–20	4	7.00	2.00	51	6.35	2.08	21	8.38	1.66	43	6.98	1.61	16	6.25	2.08	15	7.20	1.97	504	7.45	1.56
11–15	1	8.00	.	57	5.68	1.98	27	6.96	1.58	28	6.89	1.34	21	6.48	1.91	11	7.45	1.63	308	7.22	1.52
6–10	2	4.50	2.12	22	4.82	2.15	9	6.44	1.67	18	6.17	1.86	12	5.75	1.96	4	6.50	1.91	112	6.56	1.63
1–5	1	7.00	.	16	4.25	1.91	.	.	.	12	6.08	1.51	7	4.71	1.60	1	8.00	.	37	6.51	1.68
−17–0	1	0.00	.	12	2.17	1.99	1	5.00	.	5	2.60	2.79	3	0.67	1.15	2	0.00	0.00	31	1.29	2.70
Objective Scores																					
66–70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	66.00	.	23	67.42	1.16
61–65	.	.	.	.	.	.	4	61.75	1.50	2	61.00	0.00	.	.	.	.	.	.	101	62.71	1.49
56–60	.	.	.	4	57.75	2.06	12	57.25	1.36	5	58.60	0.55	.	.	.	2	58.00	2.83	250	57.75	1.43
51–55	.	.	.	9	52.11	1.17	15	53.20	1.37	10	52.10	1.52	1	51.00	.	5	53.20	1.48	488	53.11	1.43
46–50	3	48.33	2.08	12	47.58	1.51	22	48.23	1.54	12	48.17	1.19	2	47.00	1.41	4	49.00	2.00	699	48.14	1.47
41–45	4	43.50	1.29	22	43.05	1.33	33	43.00	1.46	19	43.21	1.36	5	42.80	1.30	11	43.09	1.45	906	42.99	1.48
36–40	4	37.25	0.96	27	37.63	1.39	38	38.18	1.49	36	38.08	1.48	6	38.50	1.05	12	37.75	1.36	1051	38.07	1.43
31–35	7	32.71	0.95	30	32.77	1.43	37	33.03	1.52	40	33.20	1.44	10	32.50	1.27	14	33.50	1.51	1044	33.08	1.42
26–30	11	28.00	1.61	45	28.00	1.37	39	28.21	1.49	49	28.39	1.47	17	27.94	1.56	20	28.70	1.22	990	28.18	1.43
21–25	9	23.67	1.73	46	23.37	1.44	26	22.92	1.52	47	23.28	1.47	17	23.47	1.28	15	22.73	1.58	806	23.27	1.40
16–20	4	17.00	1.15	51	17.90	1.37	21	18.57	1.21	43	18.47	1.35	16	18.25	1.53	15	18.60	1.18	504	18.33	1.41
11–15	1	13.00	.	57	12.95	1.38	27	13.70	1.27	28	12.75	1.21	21	12.86	1.39	11	13.64	1.29	308	13.37	1.36
6–10	2	9.50	0.71	22	8.41	1.56	9	7.67	1.66	18	8.44	1.50	12	8.58	1.38	4	8.50	1.29	112	8.85	1.27
1–5	1	5.00	.	16	3.19	1.60	.	.	.	12	3.58	1.51	7	3.14	1.35	1	4.00	.	37	3.81	1.27
−17–0	1	0.00	.	12	−1.58	2.31	1	−2.00	.	5	−0.60	0.55	3	0.00	0.00	2	0.00	0.00	31	−0.26	0.68

Table A-5D. Regression of ECT Essay on Objective Score by Group: Year 1985

Group	N	Correlation	Slope	Intercept
Female EFL	4412	.44	.059	6.268
Male EFL	3801	.45	.065	6.004
Am Ind EFL	47	.48	.088	5.147
As Am ESL	353	.62	.115	4.076
As Am EFL	284	.45	.061	6.383
Black EFL	326	.46	.067	5.758
Hisp ESL	117	.59	.116	4.469
Hisp EFL	117	.43	.070	5.671
White EFL	7339	.44	.060	6.192

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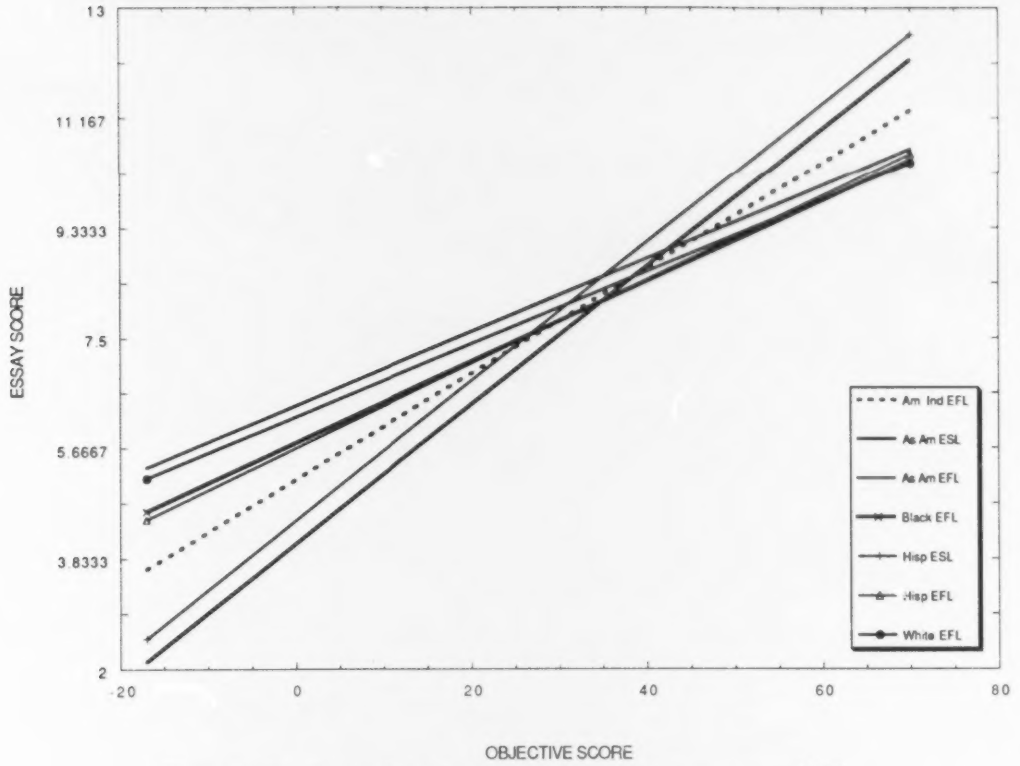

Figure A-5A. Regression of essay on objective by group: year 1985.

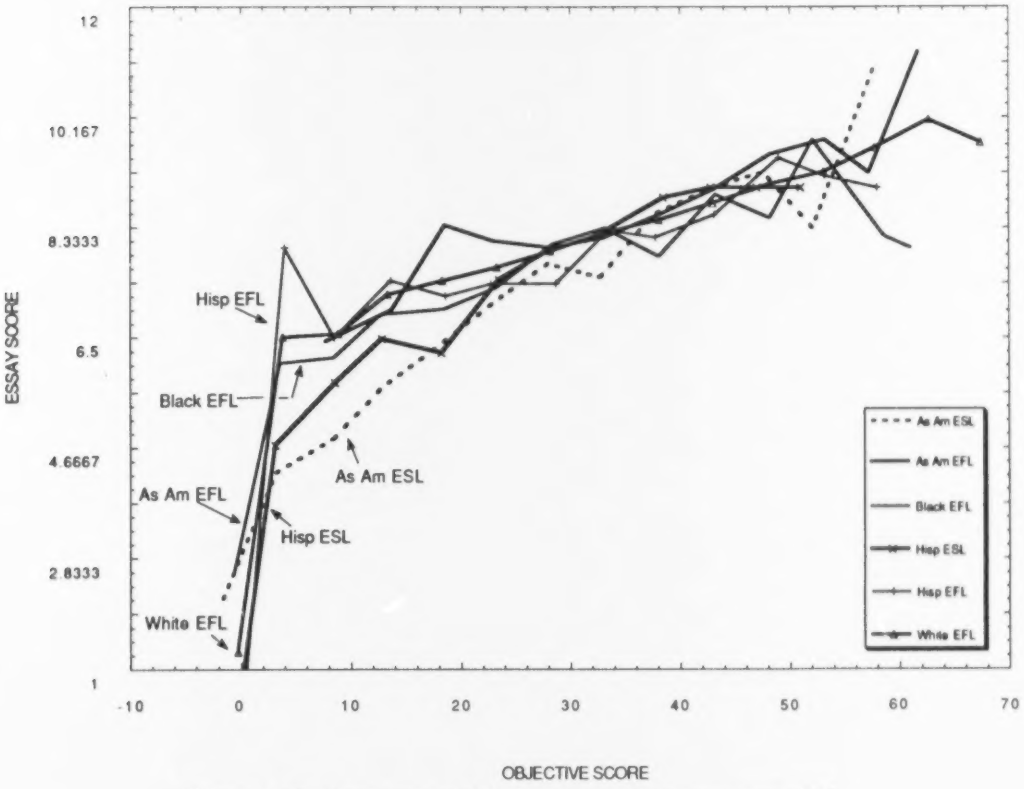

Figure A-5B. Essay versus objective means by group: year 1985.

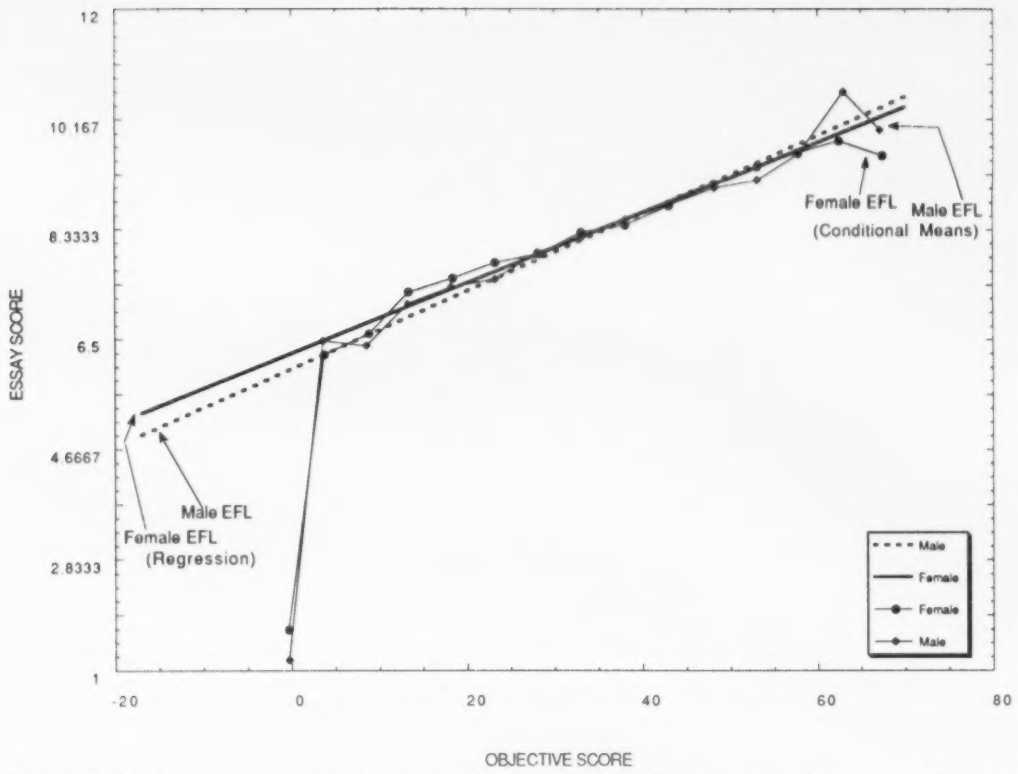

Figure A-5C. Essay versus objective means by sex: year 1985; regression of essay on objective by sex: year 1985.

Table A-6A. Summary Statistics by Group: Year 1983

	ECT Obj			*ECT Essay*			*ECT Score*			*SAT-V*		
Group	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
Female EFL	30998	34.56	12.85	30998	5.77	1.24	30998	530.77	95.03	30998	513.91	96.20
Male EFL	27198	33.02	13.00	27198	5.45	1.30	27198	512.82	97.25	27198	528.60	94.84
Am Ind EFL	163	29.00	12.77	163	5.20	1.27	163	482.33	94.19	163	491.96	95.48
As Am ESL	841	19.23	10.92	841	3.88	1.58	841	388.72	96.16	841	353.97	115.35
As Am EFL	3405	30.40	13.17	3405	5.42	1.44	3405	496.76	103.56	3405	507.91	110.26
Black EFL	2157	26.08	12.40	2157	5.15	1.36	2157	464.13	96.74	2157	460.87	101.51
Hisp ESL	240	18.09	11.20	240	4.16	1.44	240	390.63	92.99	240	400.63	102.41
Hisp EFL	1130	26.76	12.86	1130	5.13	1.34	1130	467.70	98.73	1130	466.91	104.52
White EFL	49903	34.64	12.70	49903	5.67	1.25	49903	528.44	93.99	49903	525.82	92.44

TABLE A-6B. Intercorrelations by Group: Year 1983

		ECT Objective	*ECT Essay*	*ECT Composite*	*SAT-V*
ECT	F EFL	1.00	.44	.94	.78
Objective	M EFL		.44	.94	.76
	AI EFL		.41	.94	.71
	AA EFL		.52	.94	.78
	AA ESL		.58	.93	.67
ECT					
Essay	B EFL	.49	1.00	.71	.46
	H EFL	.49		.72	.45
	H ESL	.55		.70	.49
	W EFL	.42		.78	.53
				.84	.63
ECT					
Composite		.94	.76	1.00	.77
		.94	.75		.76
		.93	.81		.74
		.94	.70		.79
					.73
SAT-V		.75	.49	.75	1.00
		.79	.49	.79	
		.75	.58	.77	
		.75	.42	.74	

Values above the main diagonal are Female EFL, Male EFL, American Indian EFL, Asian American EFL, and Asian American ESL.
Values below the main diagonal are Black EFL, Hispanic EFL, Hispanic ESL, and White EFL.

Table A-6C. Summary Statistics by Objective Score Interval: Year 1983

Obj Score	*Am Ind EFL*			*As Am ESL*			*As Am EFL*			*Black EFL*			*Hisp ESL*			*Hisp EFL*			*White EFL*		
	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*	N	*Mean*	*SD*
									Essay Scores												
66–70	.	.	.	.	.	.	1	8.00	.	.	.	.	.	.	.	.	.	.	70	7.06	1.05
61–65	2	5.50	0.71	.	.	.	16	6.75	1.06	9	6.78	1.39	.	.	.	5	6.80	0.84	659	6.80	1.09
56–60	4	6.25	0.96	.	.	.	83	6.66	1.10	14	6.43	1.09	.	.	.	17	6.41	0.87	1874	6.63	1.07
51–55	7	6.00	1.53	7	6.29	1.11	150	6.51	1.05	48	6.35	1.02	2	4.00	0.00	24	6.75	1.26	3247	6.36	1.11
46–50	7	6.14	0.38	8	5.38	1.85	228	6.46	1.12	84	6.36	1.08	3	7.00	1.00	48	6.08	1.09	4650	6.21	1.13
41–45	8	5.63	0.74	19	5.74	1.37	322	6.07	1.30	140	5.87	1.27	4	6.25	0.96	93	6.00	1.17	5986	6.00	1.12
36–40	11	5.91	1.45	42	5.57	1.36	395	5.94	1.19	205	5.80	1.12	8	5.00	1.07	94	5.59	0.96	6737	5.82	1.13
31–35	25	5.44	1.26	58	4.83	1.31	446	5.66	1.17	247	5.59	1.17	11	5.27	1.10	134	5.28	1.22	7120	5.65	1.14
26–30	30	5.33	1.15	78	4.83	1.38	446	5.38	1.30	296	5.41	1.10	33	4.91	1.23	146	5.29	1.17	6741	5.45	1.14
21–25	26	4.85	1.35	132	4.14	1.31	452	5.08	1.26	317	4.99	1.24	31	4.77	1.28	165	5.16	1.15	5588	5.23	1.14
16–20	22	4.50	1.14	151	4.01	1.47	394	4.77	1.24	309	4.81	1.08	42	4.40	1.47	159	4.74	1.24	3930	4.99	1.16
11–15	11	4.73	1.01	150	3.29	1.26	275	4.29	1.30	280	4.42	1.21	31	3.58	0.99	139	4.45	1.12	2210	4.72	1.15
6–10	9	4.33	1.00	121	2.91	1.13	152	3.99	1.31	152	4.05	1.34	48	3.31	1.09	71	4.17	1.31	849	4.40	1.19
1–5	1	4.00	.	59	2.37	0.85	37	3.24	1.30	49	3.59	1.43	21	3.19	0.98	30	3.33	1.18	217	4.12	1.21
−17–0	.	.	.	16	2.25	0.86	8	2.75	1.04	7	3.29	1.38	6	2.50	0.55	5	3.80	1.48	25	3.60	1.19
									Objective Scores												
66–70	.	.	.	.	.	.	1	66.00	.	.	.	.	.	.	.	.	.	.	70	67.01	1.21
61–65	2	61.00	0.00	.	.	.	16	62.81	1.22	9	62.56	1.24	.	.	.	5	61.40	0.89	659	62.64	1.43
56–60	4	58.25	1.26	.	.	.	83	58.06	1.34	14	57.21	1.25	.	.	.	17	57.53	1.50	1874	57.94	1.46
51–55	7	53.29	0.76	7	53.43	1.81	150	52.93	1.36	48	53.08	1.51	2	51.00	0.00	24	52.67	1.46	3247	53.04	1.45
46–50	7	48.29	1.50	8	48.00	1.77	228	48.09	1.49	84	47.83	1.40	3	48.67	1.15	48	48.35	1.39	4650	48.02	1.45
41–45	8	43.25	1.28	19	42.58	1.57	322	42.93	1.43	140	43.01	1.42	4	42.50	1.00	93	42.94	1.47	5986	43.07	1.45
36–40	11	37.91	0.94	42	37.86	1.54	395	38.12	1.44	205	37.81	1.44	8	38.63	1.69	94	37.96	1.44	6737	38.08	1.42
31–35	25	33.24	1.36	58	32.79	1.47	446	33.04	1.39	247	32.92	1.47	11	33.18	1.17	134	32.99	1.44	7120	33.14	1.42
26–30	30	28.07	1.26	78	27.77	1.37	446	28.05	1.42	296	28.17	1.43	33	27.94	1.48	146	28.29	1.42	6741	28.09	1.44
21–25	26	23.46	1.39	132	23.00	1.47	452	23.16	1.46	317	22.96	1.51	31	22.87	1.48	165	23.02	1.39	5588	23.18	1.44
16–20	22	18.18	1.68	151	18.01	1.37	394	18.13	1.46	309	18.28	1.42	42	18.21	1.44	159	18.21	1.42	3930	18.24	1.42
11–15	11	13.00	1.48	150	13.16	1.41	275	13.12	1.42	280	13.20	1.43	31	12.84	1.46	139	13.26	1.47	2210	13.39	1.40
6–10	9	7.89	1.36	121	8.30	1.39	152	8.26	1.44	152	8.55	1.31	48	8.19	1.44	71	8.46	1.51	849	8.57	1.32
1–5	1	1.00	.	59	3.86	1.28	37	3.22	1.32	49	3.35	1.42	21	3.14	1.53	30	3.87	1.20	217	3.82	1.33
−17–0	.	.	.	16	−0.69	0.79	8	−0.75	2.12	7	−1.43	1.13	6	−0.67	1.03	5	0.00	0.00	25	−1.28	1.43

Table A-6D. Summary Statistics by Objective Score Interval by Sex: Year 1983

	1983 Data					
	Female EFL			*Male EFL*		
Obj Score	N	*Mean*	*SD*	N	*Mean*	*SD*
			Essay Scores			
66–70	39	7.13	1.00	32	7.00	1.11
61–65	406	6.92	1.00	299	6.62	1.17
56–60	1173	6.70	1.06	882	6.55	1.08
51–55	2014	6.50	1.08	1553	6.20	1.14
46–50	2905	6.33	1.10	2224	6.09	1.15
41–45	3728	6.08	1.11	2962	5.89	1.16
36–40	4199	5.94	1.09	3381	5.69	1.16
31–35	4401	5.75	1.12	3764	5.50	1.16
26–30	4078	5.57	1.13	3758	5.32	1.16
21–25	3397	5.34	1.13	3313	5.07	1.17
16–20	2395	5.13	1.13	2566	4.78	1.17
11–15	1445	4.77	1.15	1588	4.49	1.19
6–10	633	4.43	1.20	654	4.16	1.25
1–5	167	3.96	1.30	193	3.77	1.26
−17–0	18	3.83	1.15	29	3.07	1.22
			Objective Scores			
66–70	39	66.85	1.06	32	67.19	1.35
61–65	406	62.65	1.41	299	62.62	1.44
56–60	1173	57.98	1.45	882	57.89	1.46
51–55	2014	53.03	1.47	1553	53.05	1.43
46–50	2905	48.04	1.44	2224	48.03	1.46
41–45	3728	43.08	1.44	2962	43.04	1.44
36–40	4199	38.08	1.43	3381	38.05	1.41
31–35	4401	33.15	1.42	3764	33.11	1.43
26–30	4078	28.13	1.44	3758	28.06	1.43
21–25	3397	23.15	1.46	3313	23.18	1.43
16–20	2395	18.32	1.43	2566	18.15	1.42
11–15	1445	13.35	1.40	1588	13.34	1.42
6–10	633	8.56	1.30	654	8.46	1.39
1–5	167	3.64	1.37	193	3.73	1.34
−17–0	18	−0.78	1.17	29	−1.31	1.63

Table A-6E. Regression of ECT Essay on Objective Score by Group: Year 1983

Group	N	*Correlation*	*Slope*	*Intercept*
Female EFL	30998	.44	.042	4.320
Male EFL	27198	.44	.044	3.989
Am Ind EFL	163	.41	.041	4.019
As Am ESL	841	.58	.084	2.263
As Am EFL	3405	.52	.057	3.675
Black EFL	2157	.49	.054	3.744
Hisp ESL	240	.55	.070	2.887
Hisp EFL	1130	.49	.051	3.771
White EFL	49903	.42	.041	4.243

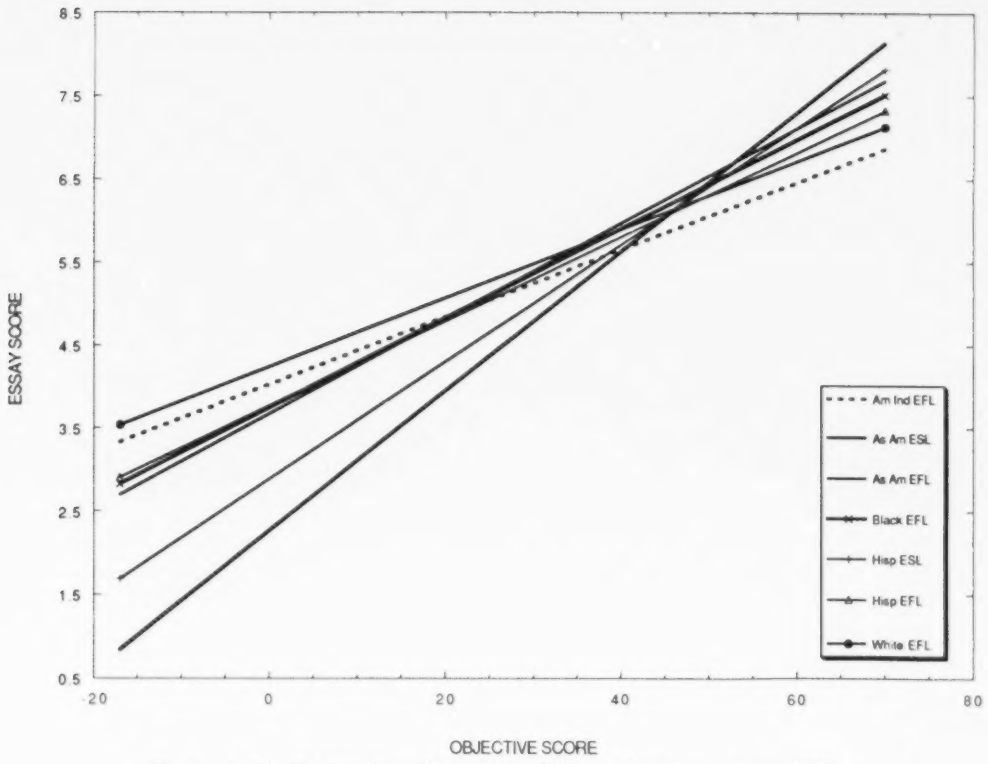

Figure A-6A. Regression of essay on objective by group: year 1983.

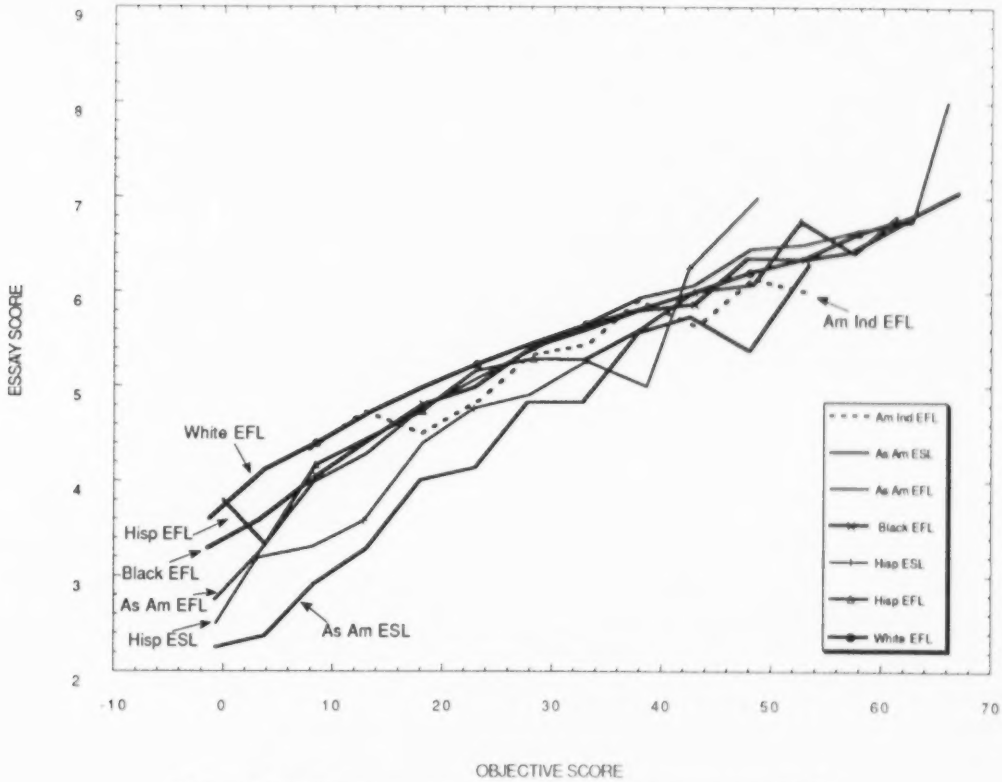

Figure A-6B. Essay versus objective means by group: year 1983.

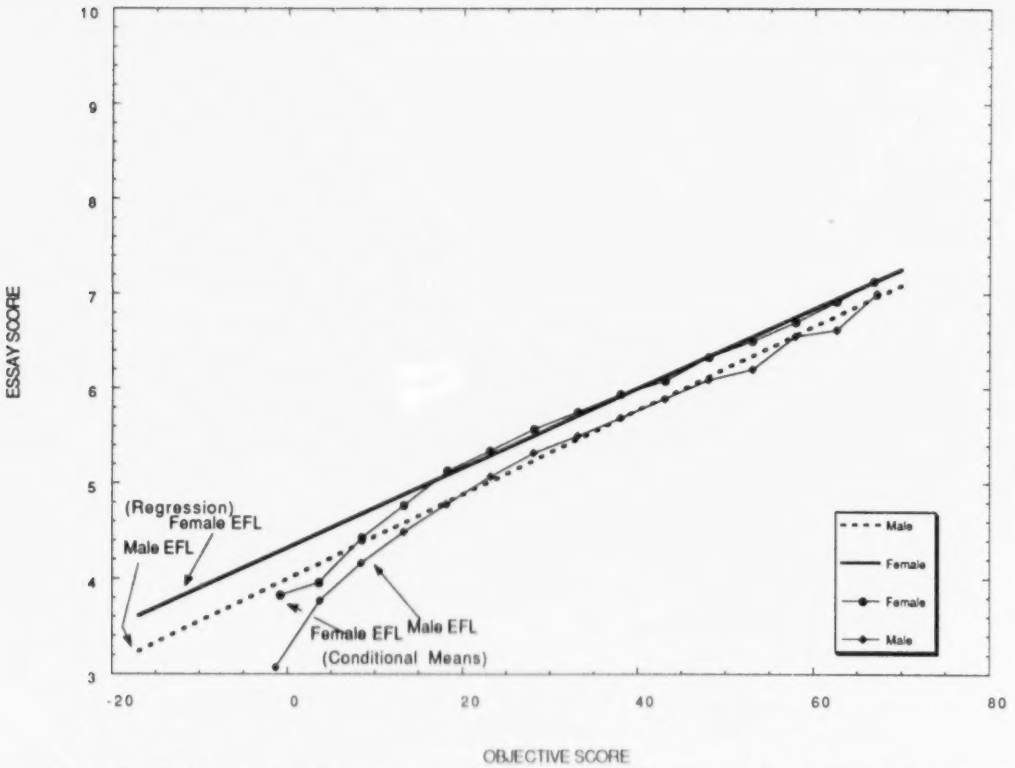

Figure A-6C. Essay versus objective means by sex: year 1983; regression of essay on objective by sex: year 1983.

APPENDIX B. ECT ESSAY DIFFERENTIAL PERFORMANCE

Please look at the following essays. All statements about scoring are in relation to the focal group. Please consider essay characteristics such as content and type of essay as factors in the following trends. The statements refer to performance relative to the focal group over the years 1983 to 1990. All groups unless otherwise specified are EFL. Some of the trends referenced below were subtle and small samples were a problem in 1985.

1990
American Indians scored relatively low

1989
Asian Americans scored relatively low

1988
Females scored relatively high
Asian American ESL scored relatively high
Hispanic ESL scored relatively high

1986
Asian American ESL scored relatively low
Blacks scored relatively low
Hispanics scored relatively low

1985
Females scored relatively low
Asian American ESL scored relatively high
Asian Americans scored relatively high
Blacks had unusual scores
Hispanic ESL scored relatively low

1983
Asian American ESL scored relatively low
Asian Americans scored relatively low

APPENDIX C. ECT ESSAY PROMPTS

"People are introduced to themselves by their misfortunes."

To what extent do you agree or disagree with this statement? Discuss, using specific examples from history, current affairs, literature, or personal observation to support your conclusions.

(12/83)

"The more things change, the more they stay the same."

To what extent do you agree or disagree with this familiar saying? In formulating your response, consider how you might apply the saying to a field such as history, literature, art, music, architecture, science, psychology, medicine, education, or current affairs.

(12/85)

"Few of the men and women of today who have attained hero status exemplify enduring, or even significant, values."

Do you agree with the quotation? Discuss, supporting your position with examples from current affairs, literature, history, or your own experience. In your discussion be sure to make clear what you consider a hero to be.

(12/86)

"Everything has its cost."

Choose an example from literature, current affairs, history, or from personal observation in which a cause, an ideal, or an object had to be paid for at some cost. What was that cost? Was what was gained worth it, or was the cost too high? Give reasons for your position.

(12/87)

I. "We learn more by doing what we *have* to do than by doing what we *like* to do."
II. "We learn more by doing what we *like* to do than by doing what we *have* to do."

Choose either statement I or statement II as the topic for an essay. In your discussion, explain and defend your topic with illustrations from your reading, study, or observation.

(12/88)

"Human beings make mistakes, but they also have great moments. One of those great moments, in my opinion, was _____."

Complete this statement with an example from literature, history, current affairs, or your own experience. Using the completed statement, write a well-organized essay in which you explain *why* you regard that moment in such a positive light.

(12/89)

"Outrageous behavior is instructive. It reveals to us the limits of our tolerance."

The quotation implies that those who go beyond accepted standards help us to clarify our own standards. Do you agree or disagree with the quotation? Discuss, supporting your position with examples from current affairs, literature, history, or your own experience.

(12/90)